ASPECT 2000D USER MANUAL

Document # UMASPECT2000D.001 Rev. ASPECT2000D.001

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1 Introduction

Dear user,

You have an ASPECT 2000D. This machine gives you a broad variety of functionality. Here is a short overview:

- Video Proc Amp
- Frame store synchronizer
- Aspect ratio controller including WSS and VI
- Enhancement
- Noise Reduction with linear and median filters
- Legalizing / Gamma correction (optional)
- Caption / VBI Processing
- DV / Firewire I/O
- Timecode Generation / Regeneration
- Audio Embedding / Deembedding (optional)
- Audio Routing, Delay and Level Control

1.1 Extent of Delivery

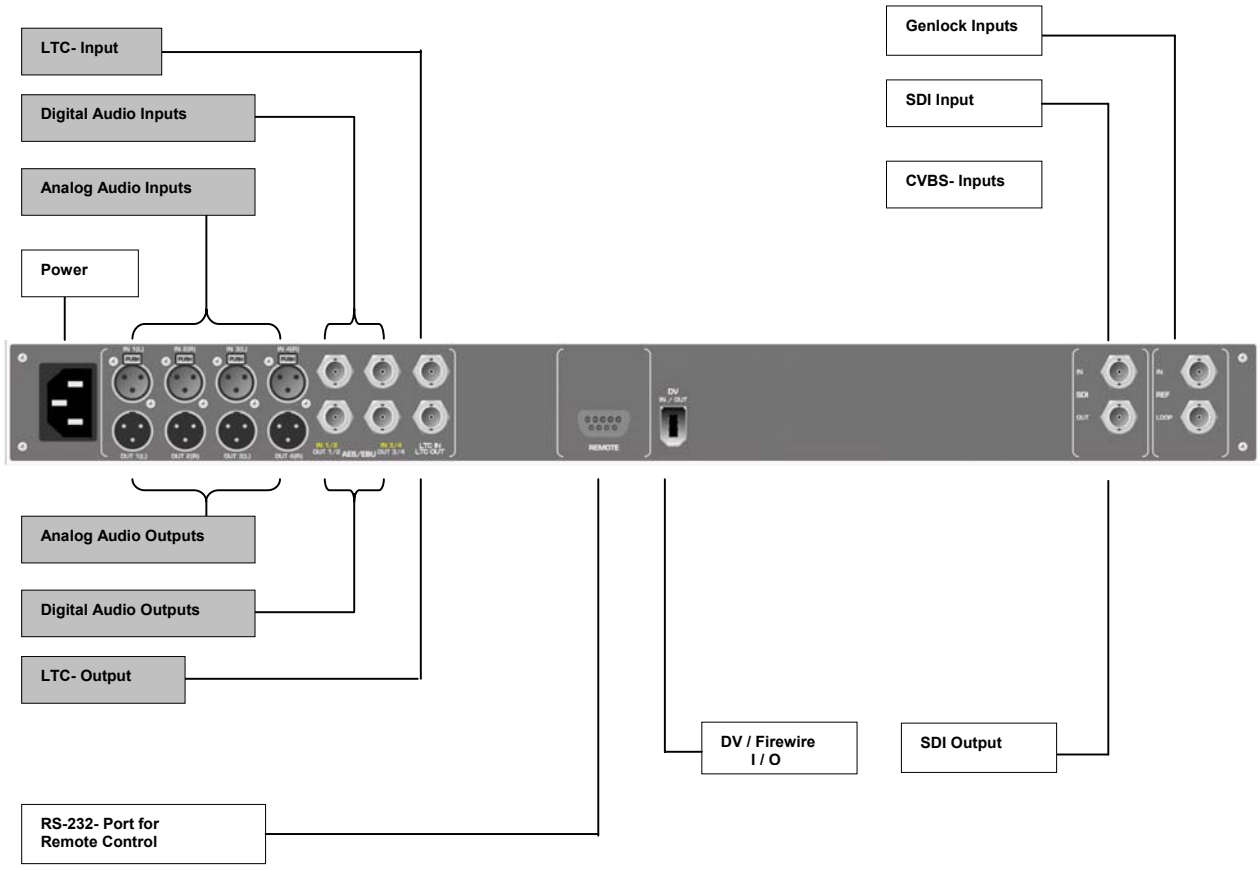
The system comes with

- CD including this documentation and the Remote Control Control Software (occasionally optional)
- Power Chord

Please check for completeness. If items are missing, please contact your dealer.

1.2 Connectors

This rear panel view shows the connectivity of the system. Optional connectors are shown with grey background.



Power

The power connector conforms to IEC 60320-1/C14.
The unit accepts 100 – 260VAC with either 50Hz or 60Hz.

Analogue Audio Inputs*

The unit supports 4 independant analog audio channels. The first channel is located leftside besides the power connector (rear view). The audio connectors use mini XLR plugs. Standard input levels are calibrated to 0dBu = -15dBfs.

Connector assignment :
Input 1 = Audio 1, left channel
Input 2 = Audio 1, right channel
Input 3 = Audio 2, left channel
Input 4 = Audio 2, right channel

Digital Audio Inputs*	Two input connectors for AES/EBU or S/PDIF signals are provided The first input is located left (rear view) besides the analog audio The connectors are of BNC type.
LTC- Input *	This input is dedicated to connect LTC timecode sources as Beta-cam,or external timecodegenerators It supports levels conforming to SMPTE und EBU. The connector is of BNC type.
DV- Input / Output	Supports miniDV-, DV-, DVCAM- or DVCpro - sources. A 6-pin IEEE1394- or Firewire- connector is used. Bidirectional
SDI- Input	SDI input conforming to SMPTE.259M / 272 M The connectors are of BNC type.
Analogue Genlock Inputs	Accepts Blackburst- or Composite- Video. The connectors are of BNC type.
RS232 Port for Remote Control	used to connect the system with an external PC or Network Inter-face. Sub-D 9-pin female plug.
Analogue Audio Outputs*	The unit supports 4 independant analog audio channels. The first channel is located leftside besides the power connector (rear view). The audio connectors use mini XLR plugs. Standard output levels are calibrated to 0dBu = -15dBfs. Connector assignment : Input 1 = Audio 1, left channel Input 2 = Audio 1, right channel Input 3 = Audio 2, left channel Input 4 = Audio 2, right channel
Digital Audio Outputs*	Two output connectors for AES/EBU or S/PDIF signals are provided The first output is located left (rear view) besides the analog audio. The connectors are of BNC type.
LTC- Output *	This output is dedicated to connect LTC timecode destinations as Betacam. It supports levels conforming to SMPTE und EBU. The connector is of BNC type.
SDI- Output	SDI output conforming to SMPTE.259M / 272 M BNC connector

.
* optional

1.3 Power

Rear Panel
Main Power Plug

Figure 1.3-1

Right Front Panel with Power Switch

Figure 1.3-2

1. Connect the power cable to the unit
2. Press the Power switch to turn the unit ON. All control lights will illuminate until the system ends its boot procedure. During this, the following message appears on the display :

```
booting system
please wait...
```

If no button lights up after the start period check the **LED Bright** seting in the **panel menu**. The adjustment must be greater than zero in order to illuminate the lights

1.4 Remote Control Software

The ASPECT 2000D package may contain software to control the unit via a PC.
Using the software has some essential advantages versus operating the unit via the local control panel

1. the complete range of functions is supported
2. in many situations, the software does it far more clearly and self explaining.

If it is necessary to connect the systems to a network, special RS232- to Ethernet- Converters are provided as an option.

1.4.1 System Requirements

To use the software, the PC should fulfill the following requirements

- Prozessor speed greater than 1GHz
- 512MB Ram
- Microsoft Windows 2000, XP, 2003, Vista
- At least 10MB disc capacity
- Screen resolution 1024 x 768 or better, 65.535 colours or better

1.4.2 Installation

To install the Remote Control Software please proceed as follows:

- Insert the CD into your CD-/DVD- drive. In most cases, an explorer window will appear which shows the content of the CD. If this should not be the case, please select and open the CD manually.
- Select the folder „Software" and click on „setup.exe".
- Please wait until the installation program has been started.
- Click on „proceed".
- Select the folder for the installation or accept the proposed folder and click on „proceed".
- Select the name for the start menu or accept the proposal and click on „proceed"..
- Now the installation software shows the current setup. Please confirm with „proceed"..
- The software will be installed. Please wait until the process is completed.
- Click on „proceed" to finish and exit the installation program.
- The software now is installed and can be started.

1.5 Front Panel Control

1.5.1 Functions

Most of the functions of the system can be controlled via the local keyboard.
There are some exceptions:

- Audio routing
- Separate Audiogain and -level
- Separate Audio delay
- VBI- Setup
- Special Timecode properties

For these functions, special setup configurations ar recalled which can be defined using the remote control software.

1.5.2 Key Properties

There are three groups of keys with different properties.

- Toggle key (directly modifies the parameter of a function)
- Shortcut key (provides fast access of a dedicated function bypassing the menu structure)
- Submenu key (provides fast access of a submenu)

Toggle keys

DV
SDI
Black (also acts as shortcut key for testpattern menu)
Bars (also acts as shortcut key for testpattern menu)
Bars
Freeze
Disable
Audio Mute
Monitor Mute
Bypass

When pressed, these keys directly change the status of the related function.
The red LED inside the key indicates whether the related function is active or not.
The keys which cover the source selection have a special behaviour. Pressing one of these keys selects the desired input and activates the related context menu.
Flashing of the LED further indicates loss of signal on the input Reason could be either loss of signal, a wrong input standard etc. If this occurs, please also check the status of the automatic standard selection.

Shortcut keys

(STD) Standard
Blacklevel
V Gain
C Gain
C Bal
Audio level
Monitor level

These keys point directly to a menu function and allow parameter modification via the rotary knob. The red LED of the key is used to signal two different events.

- Flashing indicates that the parameter can be modified via the rotary knob.
- Steady light indicates that the parameter is modified to nonstandard. In this case, normally the function modifies the related signal.

Pressing the key for about 2 seconds will set the parameter value back to default.

Submenu keys

Recursive
Median
Aspect
Zoom
Crop
Timing
Audio Delay
Monitor select
Monitor Level
Genlock
Preset

These keys point to the related submenu. It normally contains more than one function, which can be operated via the keys **Menu** and **Select** and the rotary knob.

The red LED of these keys is used to indicate the following:

- Flashing indicates that the related menu is activated.
- Steady light indicates that one of the related functions has a nondefault parameter In this case, normally the function modifies the related signal.

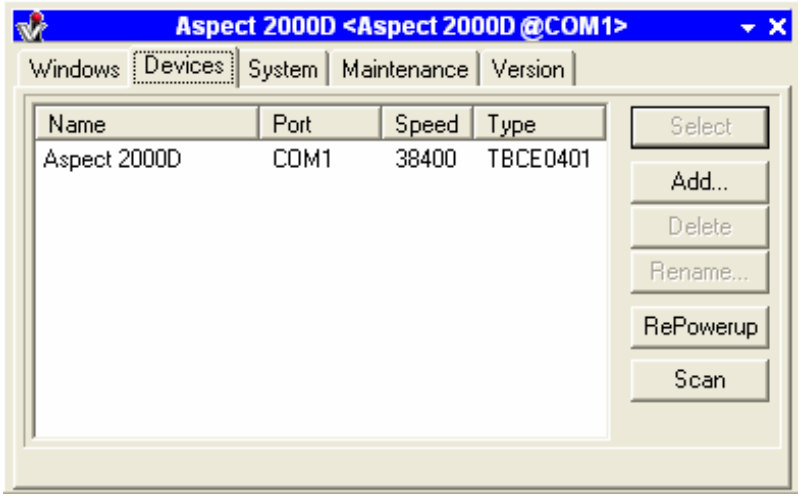
Pressing the key for about 2 seconds will set all parameter values of the related menu back to default.

1.5.3 Menu Properties

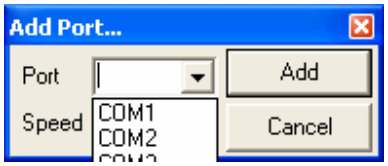
The main menu is operated via the keys **Menu** and **Select** and the rotary knob.
The key **Menu** activates / deactivates the selected menu. The system stores the last active position and recalls it when entering the menu again.
If you wish to go to the menu start, please deactivate the menu and activate it again.
All menus are operated similar. The cursor is moved by the rotary knob while the key **Select** recalls the menu item.
If the cursor is on ↑, the key **Select** leads to the next level in the menu tree.
If the cursor points to a parameter, it can be modified via the rotary knob. To leave this status, please press **Select**.

1.6 Using the Remote Control Software

The Remote Control Software supports all the functions of the system. It allows a very intuitive and well arranged presentation of the functions in use.



1-1



1-2

1.6.1 Device Registration on the PC

To connect the PC to a system, there are two possibilities:

- Scanning all the serial interfaces available on the PC

In the main menu (1-1), please click „Devices“ and afterwards „scan“. Now the software checks all available serial interfaces on the presence of a system. The procedure can be observed looking at the device list.
If only one system is detected, the software automatically connects.

- Adding an interface manually

In the main menu (1-1), please click „Devices“ and afterwards „**Add“**. The window „Add Port…“ (1-2) appears. Please select the desired serial interface, set it to 38.400baud and click „Add“. Now the software checks the selected port, reads out the type of system and its name and connects.

1.6.2 Device selection on the PC

The software is capable to administer more than one device. All windows and their positions are stored independently for the different instances.
To select a specific system, please use the main menu (1-1) and click on „Devices“. Out of the list, select the desired system and click on „**Select“**.
Alternatively, you can double click on the selected list entry. Then the software connects to the system and recalls all the windows and their positions as they were specified at the last session.

2 Housekeeping Functions

2.1 Introduction

This chapter describes some basic setup functions.

2.1.1 Keyboard button lights

Controls the intensity of the button lights

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Panel**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **LED BRIGHT**
5. Press **Select**
6. Turn the rotary knob to adjust the intensity

Via Shortcut

n/a

Via Remote Control Software

n/a

2.1.2 Keyboard display contrast

Controls the contrast of the alphanumeric readout.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Panel**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Contrast**
5. Press **Select**
6. Turn the rotary knob to adjust the contrast

Via Shortcut

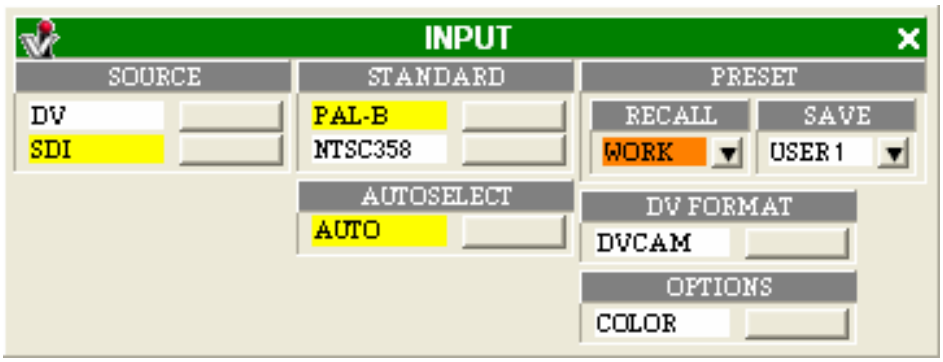
n/a

Via Remote Control Software

n/a

3 Video Input

3.1 Input Source and Standard Selection



3.1.1 Input Source

The ASPECT 2000D supports the following input sources :

a) DV / Firewire (IEEE1394). There is one connector available for both input and output.
If the DV source is not selected, it automatically acts as an output.
The DV interface supports DVCAM and DVCPro.
b) Digital components conforming to SMPTE 259M / 272M

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Input**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Source**
5. Press **Select**
6. select the desired source

Via Shortcut

1. Press the corresponding key in the input field.
2. The desired input will be selected immediately

Via Remote Control Software

1. Open the window **Input**
2. select the desired input
3. The desired input will be selected immediately

3.1.2 Automatic Input Standard Selection

The system is able to detect the supported standards automatically. This feature can be switched off if desired.
Please note

The vertical frequency of the output signal will always follow the conditions on the input.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Input**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Autosel**
5. Press **Select**
6. Select ON / OFF

Via Shortcut

1. Press the corresponding key in the input field
2. the menu will show **Autosel**
3. Press **Select**
4. Select ON / OFF

Via Remote Control Software

1. Open the window **Input**
2. select the desired status in the field **Autoselect**

3.1.3 Manual Input Standard Selection

Normally, one would use the automatic standard selection.
But under special circumstances (e.g. instable input signal), it can be usefull to set the input standard manually.

It is not possible to select the standard manually as long as the automatic is ON.
The vertical frequency of the output signal will follow the input.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Input**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Standard**
5. Press **Select**
6. Select the desired standard. If it is not possible to select a standard manually, please check whether automatic selection is enabled.
7. The system may need up to 1sec to detect the incoming standard.

Via Shortcut

1. Press the key **STD** in the input field.
2. Select the desired standard. If it is not possible to select a standard manually, please check whether automatic selection is enabled.
3. The system may need up to 1sec to detect the incoming standard.

Via Remote Control Software

1. Open the window **Input**
2. select the desired standard

3.2 Various Input Setup Features

Some inputs accasionally net additional setup.
This chapter contains the supported features.

3.2.1 Input Black/White

Disables input colour information.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Input**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **B/W**
5. Press **Select**
6. Select **color** or **B/W**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Input**
2. click **B/W** or **Color** in the option field. The B/W status will be marked red as a warning

3.3 Preset Input Source and Standard Selection

3.3.1 Recalling a local input Preset

work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Input**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Preset**
5. Press **Select**
6. select the desired setting via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Input**
2. change setting in the Preset field as desired

3.3.2 Saving a local input Preset

Up to 4 local prest configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Input**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Save Preset**
5. Press **Select**
6. select the desired Preset via the rotary knob
7. Press **Select**

Via Shortcut

n/a

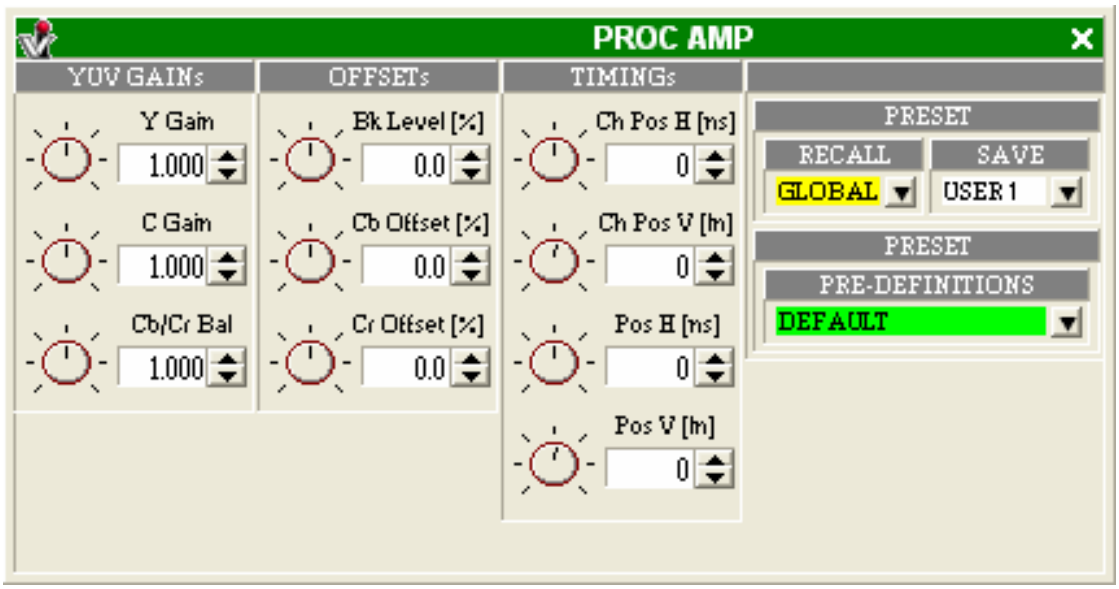
Via Remote Control Software

1. Open the window **Input**
2. select the desired Preset

4 Input Video Proc Amp

4.1 Input Proc Amp

Video signals undergo various types of distortion. The level of luminance and / or chrominance may change, decoders sometimes produce incorrect timing etc.
For this reason, the system provides a versatile input Proc Amp to correct various signal parameters.



4.1.1 Input Luminance Gain (Gain Y)

Adjustment of the luminance input gain.
Range 0.000 … 1.999.
Available for all sources.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Procamp**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Gain Y**
5. Press **Select**
6. Adjust by turning the rotary knob

Via Shortcut

1. Press **Y Gain**
2. Adjust by turning the rotary knob

Via Remote Control Software

1. Open the window **Proc Amp**
2. adjust **Gain Y** to the desired level

4.1.2 Input Chroma Gain (Gain C)

Adjustment of the chrominance input gain. Controls both Cb- and Cr- components simultaniously
Range 0.000 … 1.999.
Available for all sources.
.

Via Menu

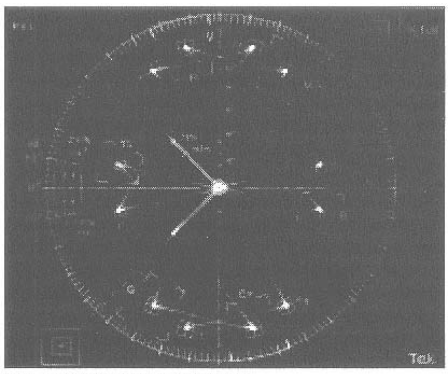
1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Procamp**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Gain C**
5. Press **Select**
6. Adjust by turning the rotary knob

Via Shortcut

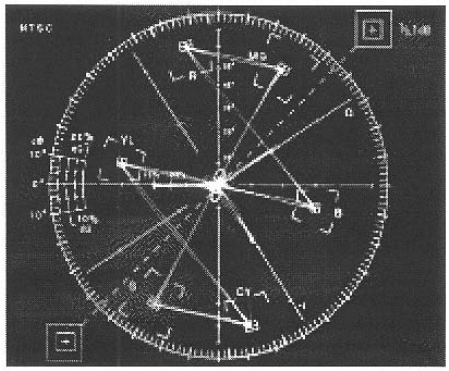
1. Press **C Gain**
2. Adjust by turning the rotary knob

Via Remote Control Software

1. Open the window **Proc Amp**
2. adjust **Gain C** to the desired level



PAL vector display of color bars



NTSC SMPTE color bar test picture. The dots are in the approprate boxes and the color burst placed on the horizontal axis.

4.1.3 Input Chroma Balance C_b/C_r

Adjustment of the Cb/Cr balance. Controls both Cb- and Cr- components simultaniously
Range 0.000 … 1.999.
Available for all sources.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Procamp**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **C_b C_r Bal**
5. Press **Select**
6. Adjust by turning the rotary knob

Via Shortcut

1. Press **C Bal**
2. Adjust by turning the rotary knob

Via Remote Control Software

1. Open the window **Proc Amp**
2. adjust **Bal Cb / Cr** to the desired ratio

4.1.4 Input Black Level (pedestal)

Video-black is defined in NTSC and Pal-M 7.5% above the blanking level. In PAL, PAL-N and SECAM it is 0%. This setup is only available for NTSC, NTSC 4.43 and PAL-M

Adjustment of the input black level.
Range - 11,4% .. +11,4% in steps of 1‰

Available for all sources.

Via Menu

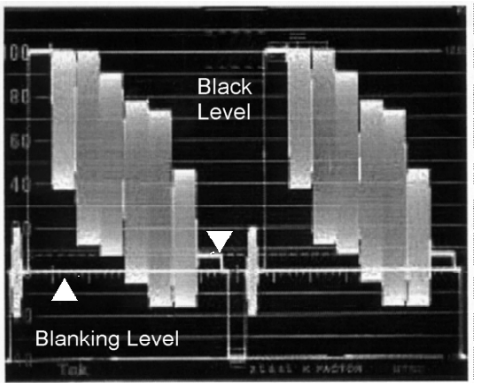
1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Procamp**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Bk Level**
5. Press **Select**
6. Adjust by turning the rotary knob

Via Shortcut

1. Press **Black Level**
2. Adjust by turning the rotary knob

Via Remote Control Software

1. Open the window **Proc Amp**
2. adjust **Bk Level** to the desired value



4.1.5 Input Offset C_b

Adjustment of the input chrominance offset Cb
Range - 11,4% .. +11,4% in steps of 1‰

Available for all sources.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Procamp**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Offset C_b**
5. Press **Select**
6. Adjust by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Proc Amp**
2. adjust **Offset C_b** to the desired value

4.1.6 Input Offset C_r

Adjustment of the input chrominance offset Cb
Range - 11,4% .. +11,4% in steps of 1‰

Available for all sources.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Procamp**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Offset C_r**
5. Press **Select**
6. Adjust by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Proc Amp**
2. adjust **Offset Cr** to the desired value

4.1.7 Input horizontal Position

Adjustment of the horizontal input timing, luminance / chrominance.
Range -2370ns .. +2296ns in steps of 74ns (1 luminance pixel)

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Procamp**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Timing**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Y+C**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **Pos H**
9. Press **Select**
10. Adjust by turning the rotary knob

Via Shortcut

1. Press **Timing**
2. Turn the rotary knob until the cursor points to **Y+C**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Pos H**
5. Press **Select**
6. Adjust by turning the rotary knob

Via Remote Control Software

1. Open the window **Proc Amp**
2. adjust **Pos H** to the desired position

4.1.8 Input horizontal Chroma Position

Adjustment of the horizontal input chroinance timing.
Range -2370ns .. +2296ns in steps of 74ns (1 luminance pixel)

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Procamp**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Timing**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **C to Y**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **C Pos H**
9. Press **Select**
10. Adjust by turning the rotary knob

Via Shortcut

1. Press **Timing**
2. Turn the rotary knob until the cursor points to **C to Y**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **C Pos H**
5. Press **Select**
6. Adjust by turning the rotary knob

Via Remote Control Software

1. Open the window **Proc Amp**
2. adjust **Ch Pos H** to the desired position

4.1.9 Input vertical Position

Adjustment of the vertical input timing, luminance / chrominance.
Range -8lines .. +7 lines in steps of 1line

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Procamp**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Timing**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Y+C**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **Pos V**
9. Press **Select**
10. Adjust by turning the rotary knob

Via Shortcut

1. Press **Timing**
2. Turn the rotary knob until the cursor points to **Y+C**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Pos V**
5. Press **Select**
6. Adjust by turning the rotary knob

Via Remote Control Software

1. Open the window **Proc Amp**
2. adjust **Pos V** to the desired position

4.1.10 Input vertical Chroma Position

Adjustment of the vertical input chroinance timing.
Range -8lines .. +7 lines in steps of 1line

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Procamp**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Timing**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **C to Y**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **C Pos V**
9. Press **Select**
10. Adjust by turning the rotary knob

Via Shortcut

1. Press **Timing**
2. Turn the rotary knob until the cursor points to **C to Y**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **C Pos V**
5. Press **Select**
6. Adjust by turning the rotary knob

Via Remote Control Software

1. Open the window **Proc Amp**
2. adjust **Ch Pos V** to the desired position

4.2 Preset Proc Amp

4.2.1 Recalling a Proc Amp default Setup (Predefinition)

The default Setup provides a common reset to the Proc Amp functions.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Procamp**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Predef**
5. Press **Select**
6. Select **default** by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Proc Amp**
2. Select **default** in the PRE-Definition field

4.2.2 Recalling a local Proc Amp Preset

work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Procamp**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Preset**
5. Press **Select**
6. select the desired setting via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Proc Amp**
2. change setting in the Preset field as desired

4.2.3 Saving a local Proc Amp Preset

Up to 4 local preset configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Procamp**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Save Preset**
5. Press **Select**
6. select the desired Preset via the rotary knob
7. Press **Select**

Via Shortcut

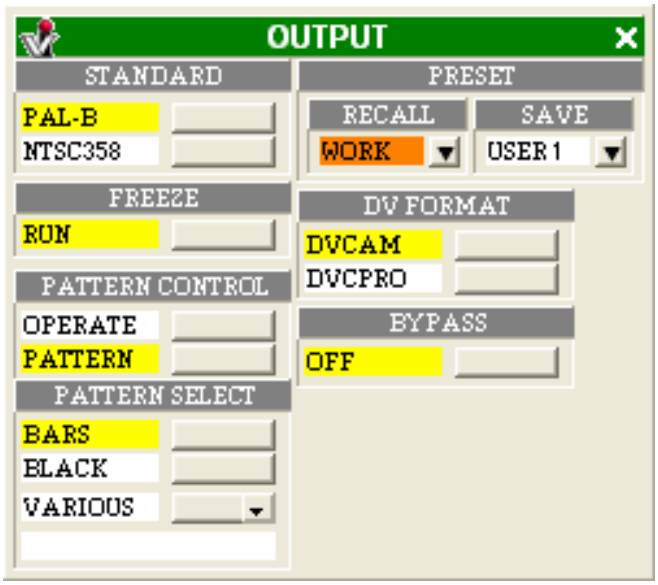
n/a

Via Remote Control Software

1. Open the window **Proc Amp**
2. select the desired Preset

5 Video Output

5.1 System Output Settings



5.1.1 Output Standard Selection

The vertical frequency of the output follows the signal on the input of the system. That means, it is not possible to directly select a desired output standard. Select an appropriate input standard instead.

5.1.2 Output Bypass

By selecting bypass to „ON“, the inputs of the system are directly bypassed to the corresponding outputs.
This function is not supported by the SDI I/O and the Firewire I/O

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Output**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Bypass**
5. Press **Select**
6. select Bypass **ON** or **OFF**

Via Shortcut

1. Press **Bypass**
2. the key acts as a toggle key. Pressing bypass again switches back to the system output

Via Remote Control Software

1. Open the window **Output**
2. select Bypass **ON** or **OFF**

5.1.3 Freeze

Stores one frame and reads it out repeatedly

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Output**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Freeze**
5. Press **Select**
6. selcect **ON** or **OFF**

Via Shortcut

1. Press the key **Freeze** in the picture field. The function will toggle between **ON** and **OFF**

Via Remote Control Software

1. Open the window **Mode**
2. select **Run** or **Freeze**

5.1.4 Output DV Format

The system supports two DV formats.
DVCAM -> Colourcoding 4:2:0 (DVCAM, miniDV, DV)
DVCPRO -> Colourcoding 4:1:1 (DVCPro)
.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Output**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **DV FORMAT**
5. Press **Select**
6. Select **DVCAM** or **DVCPRO**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Output**
2. Select **DVCAM** or **DVCPRO**

5.2 Output Preset

5.2.1 Recalling a local Output Preset

work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Output**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Preset**
5. Press **Select**
6. select the desired setting via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Output**
2. change setting in the Preset field as desired

5.2.2 Saving a local Output Preset

Up to 4 local preset configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Output**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Save Preset**
5. Press **Select**
6. select the desired Preset via the rotary knob
7. Press **Select**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Output**
2. select the desired Preset

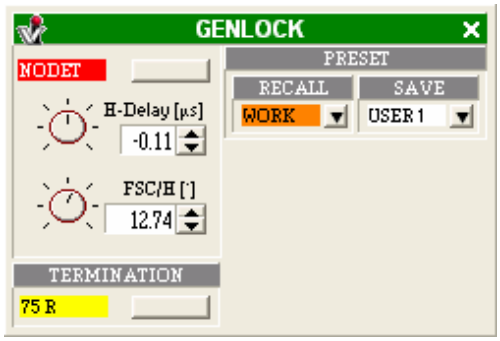
6 System Synchronisation

6.1 Introduction

When various video sources are combined, their signals should be timed together,. A precision reference signal from a master sync-generator must be applied to each device and genlocked so that the output of the equipment is synchronized with the timing of the reference. By connecting the individual equipment to the timing reference source the processing delay of the equipment and the transmission delay of the cable connecting the equipment must be taken into account. Individual timing adjustment must be made to compensate for the different delays. For horizontal timing adjustment, use the H-POS option, for the subcarrier-to-horizontal phase (Fsc/H) the FSC/H optionIn an production environment it is common practice to operate all systems from a common sync source.

The black burst signal is often used for genlock equipment. It is a composite signal without active video, but has all synchronization signals. The ASPECT 2000D also accepts a composite video signal as reference.

6.2 Genlock Operation



6.2.1 Genlock Activate

Activates / deactivates the Genlock Function.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Genlock**
3. Press **Select**
4. Turn the rotary knob to activate / deactivate Genlock

Via Shortcut

1. Press the **Genlock** key in the rightmost field.
2. Press **Select**
3. Turn the rotary knob to activate / deactivate Genlock

Via Remote Control Software

1. Open the window **Genlock**
2. click **On** / **Off** (**Nodet**)

off	The system is synchronized internally from the input signal.
lock	This message appears if the genlock mode is on and the external synchronization signal is recognized and the system is locked.
lock°	H-lock without FSC lock.
nolock	This message appears if the genlock mode is on, but is not locked to the external source.

6.2.2 Genlock H- Delay

Defines the horizontal delay between reference- and output signal
Range : -16,0usec .. +15,96usec in steps of 37ns
The display shows n/a if no valid input signal is available

Via Menu

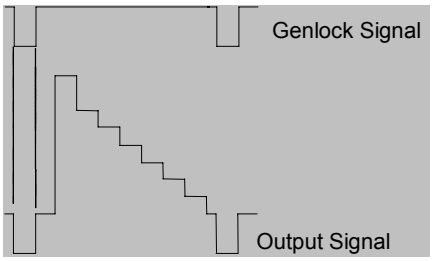
1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Genlock**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **H- Pos**
5. Press **Select**
6. select the desired value via the rotary knob

Via Shortcut

1. Press the **Genlock** key in the rightmost field.
2. Turn the rotary knob until the cursor points to **H- Pos**
3. Press **Select**
4. Turn the rotary knob to adjust to the desired value

Via Remote Control Software

1. Open the window **Genlock**
2. change **H-Delay** as desired



6.2.3 Genlock Termination

75 Ohm : Genlock Input terminated
Hi-Z : Genlock Input not terminated

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Genlock**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Term**
5. Press **Select**
6. select the desired setting via the rotary knob

Via Shortcut

1. Press the **Genlock** key in the rightmost field.
2. Turn the rotary knob until the cursor points to **Term**
3. Press **Select**
4. Turn the rotary knob to selct the desired status

Via Remote Control Software

1. Open the window **Genlock**
2. change setting as desired

6.3 Genlock Preset

6.3.1 Recalling a local Genlock Preset

work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Genlock**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Preset**
5. Press **Select**
6. select the desired setting via the rotary knob

Via Shortcut

1. Press the **Genlock** key in the rightmost field.
2. Turn the rotary knob until the cursor points to **Preset**
3. Press **Select**
4. select the desired setting via the rotary knob

Via Remote Control Software

1. Open the window **Genlock**
2. change setting in the Preset field as desired

6.3.2 Saving a local Genlock Preset

Up to 4 local prest configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Genlock**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Save Preset**
5. Press **Select**
6. select the desired Preset via the rotary knob
7. Press **Select**

Via Shortcut

1. Press the **Genlock** key in the rightmost field.
2. Turn the rotary knob until the cursor points to **Save Preset**
3. Press **Select**
4. select the desired Preset via the rotary knob

Via Remote Control Software

2. Open the window **Genlock**
3. select the desired Preset

7 Test Pattern

7.1 Test Pattern

The system is equipped to provide a wide selection of standard test patterns.

The following patterns are available:

- Black
- Color Bars for 50Hz and 60Hz (PAL / NTSC)
- IWQ Bar (60Hz only)
- Red 2T
- ITU Multiburst
- ITU 2T20T
- ITU Line 330 (50Hz only)
- ITU Line 331 (50Hz only)
- ITU Line 17 Field 1 (60Hz only)
- ITU Line 17 Field 2 (60Hz only)
- C_b Ramp

Test Patterns are activated and selected in two steps.

7.1.1 Test Pattern activation

This function switches between the selected Test Pattern and the video signal.
The two patterns **Colorbars** and **Black** are directly accessable via shortcuts.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Output**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Operate**
5. Press **Select**
6. Select **Video** or **Test**

Via Shortcut

1. Press **Black** or **Bars**.
2. The selected Pattern will appear on the output. To return to video, press the key again.
3. Selecting **Black** or **Bars** via the shortcut keys overwrites other selections.

Via Remote Control Software

1. Open the window **Output**
2. click **Operate** to show the current video signal.
3. click **Pattern** to show the selected test pattern.
4. select the desired test pattern by clicking **Bars** or **Black** or **various.**

7.1.2 Test Pattern Selection

The two patterns **Colorbars** and **Black** are directly accessable via shortcuts.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Pattern**
3. Press **Select**
4. select the desired test pattern by turning the rotary knob

Via Shortcut

1. Press **Black** oder **Bars**.
2. The selected Pattern will appear on the output. To return to video, press the key again
3. The menu shows the selected test pattern. Select other test patterns by turning the rotary knob

Via Remote Control Software

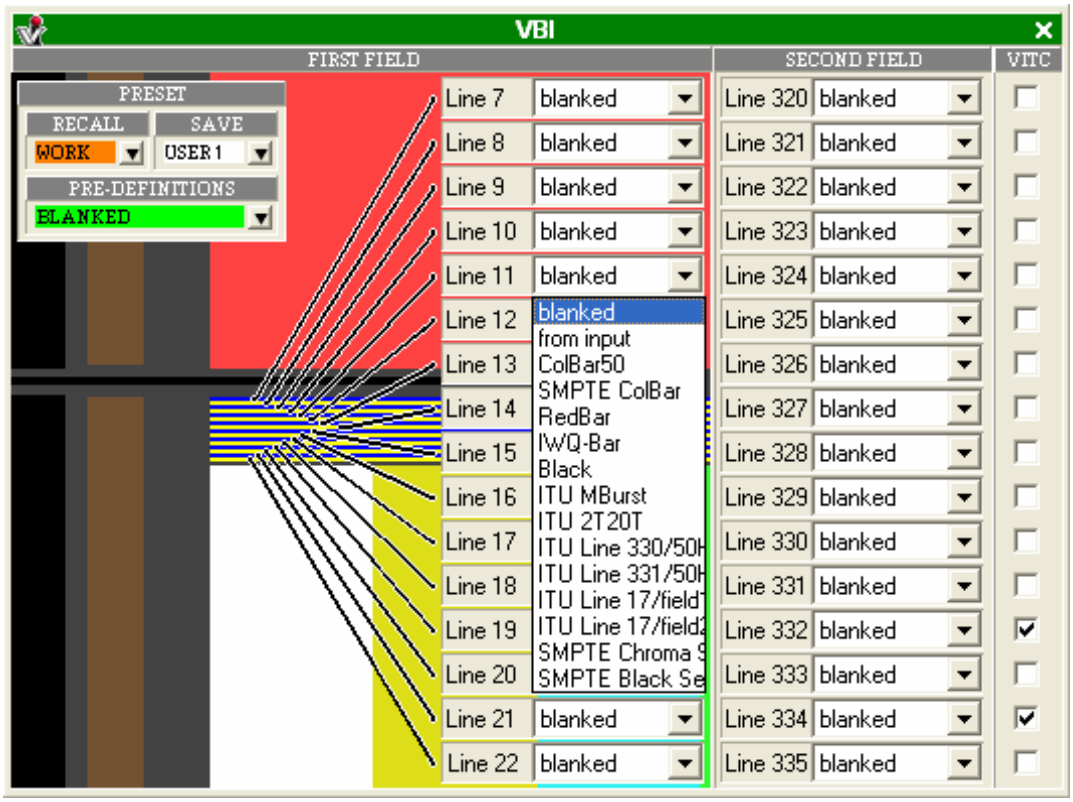
1. Open the window **Output**
2. select the desired test pattern by clicking **Bars** or **Black** or **various**

8 VBI- Processing

8.1 VBI- Processing (Caption)

The vertical blanking interval is transparent to the incoming video signal

The system is equipped to insert standard test signals into the vertical blanking interval. It further allows the inserting of VITC timecode information.



8.1.1 VBI Test Signal Insertion

The following test patterns are provided:

- Black
- Color Bars (different for 50 / 60Hz)
- IWQ Bar (60Hz)
- Red 2T
- ITU Multiburst
- ITU 2T20T
- ITU Line 330 (50Hz)
- ITU Line 331 (50Hz)
- ITU Line 17 Field 1 (60Hz)
- ITU Line 17 Field 2 (60Hz)
- C_b Ramp

Several Predefinitions are available

- Blanked
  All VBI- Lines blanked
- Blanked + ITU
  insertion of standard ITU lines, remaining area blanked
- Input + ITU
  insertion of standard ITU lines, remaining area filled with information from the input
- Input
  VBI area transparent
- 4 user Presets
  The generation of user presets is supported by the remote control software. This function is not available via the local keyboard.

Via Menu (Predefinitions)

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **VBI**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Predef**
5. Press **Select**
6. Select the desired predefinition by turning the rotary knob.

Via Shortcut

n/a

Via Remote Control Software (Predefinition)

1. Open the window **VBI**
2. recall the desired configuration via the **Pre-Definition** field

Via Remote Control Software (detailed defintion line by line)

1. Open the window **VBI**
2. define the desired pattern line by line

8.1.2 Timecode inserter / manual VITC line select

Select the lines for VITC insertion.
There is an identical menu in the **Timecode** menu. The setting can be done via both menues in the same manner.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **inserter**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **VITC**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **OUTPOS**
9. Press **Select**
10. select the desired lines

Via Shortcut

1. Press **Timecode**
2. Turn the rotary knob until the cursor points to **reader**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **VITC**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **OUTPOS**
7. Press **Select**
8. select the desired lines

Via Remote Control Software

1. Open the window **VBI**
2. activate the extended window
3. select the desired lines in the inserter field

8.2 VBI Preset

8.2.1 Recalling a local VBI Preset

work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **VBI**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Preset**
5. Press **Select**
6. select the desired setting via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **VBI**
2. change setting in the Preset field as desired

8.2.2 Saving a local VBI Preset

Up to 4 local prest configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **VBI**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Save Preset**
5. Press **Select**
6. select the desired Preset via the rotary knob
7. Press **Select**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **VBI**
2. select the desired Preset

9 Aspect Ratio Conversion (ARC) and Zoom

9.1 Introduction

To simplify the standard workflow the ASPECT 2000D provides predefined format settings. For this reason, normally it is not necessary to calculate the parameters for the common formats.
If the there are special requirements which demand the adjustment of parameters, there impact is additive.
For example, if a zoom factor of 1,0 is selected, the input format is 4:3 full format and the output format shall be 16:9 anamorph, the system automatically calculates and applies the appropriate parameters.
But if the image should be shrinked to half of its size in horizontal and vertical direction, just apply a zoom factor of 0,5. No further settings will be influenced.
With additional parameters like Pan, Scan, Crop it is the same situation.
For the crop function therefore under some special cicumstances even negative values may occur.

9.1.1 ARC Input Control

The aspect ratio conversion can be setup manually or using control information included in the input signal.
The system supports WSS and VI as formats for the input control information

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **active format**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **in auto**
7. Press **Select**
8. Turn the rotary knob to the desired mode **OFF** or **WSS** or **VI**

Via Shortcut

1. Press **Aspect**
2. Turn the rotary knob counter clockwise to **in auto**
3. Press **Select**
4. Turn the rotary knob to the desired mode **OFF** or **WSS** or **VI**

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. select the desired mode in the active format field
3. If no valid input format can be detected, the parameter is marked as red.

9.1.2 Manual selection of the input format

The input format can only be selected manually if the input control iss et to OFF.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **active format**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **input**
7. Press **Select**
8. Turn the rotary knob clockwise / counter clockwise to the desired format

Via Shortcut

1. Press **Aspect** twice
2. Turn the rotary knob clockwise / counter clockwise to the desired format

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. select the desired input format via the active formats / input field

9.1.3 Selection of the output format

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **active format**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **output**
7. Press **Select**
8. Turn the rotary knob clockwise / counter clockwise to the desired format

Via Shortcut

1. Press **Aspect** once
2. Turn the rotary knob clockwise / counter clockwise to the desired format

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. select the desired input format via the active formats / output field

9.2 Zoom, Pan & Scan

Independant of the aspect ratio settings, the size and horizontal / vertical scaling of the output image can be influenced manually.

9.2.1 Manual adjustment of the output zoom factor

Changing of the zoomfactor maintains the aspect ratio.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Zoom**
5. Press **Select**
6. adjust the factor using the rotary knob

Via Shortcut

1. Press **Zoom**.
2. adjust the factor using the rotary knob

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. adjust the factor in the zoom setting field

9.2.2 Manual adjustment of the output aspect ratio

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Aspect**
5. Press **Select**
6. adjust the factor using the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. adjust the factor in the zoom setting field

9.2.3 Manual adjustment of the output horizontal zoom

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Zoom H**
5. Press **Select**
6. adjust the factor using the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. adjust the factor in the zoom setting field

9.2.4 Manual adjustment of the output vertical zoom

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Zoom V**
5. Press **Select**
6. adjust the factor using the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. adjust the factor in the zoom setting field

9.2.5 Manual adjustment of Pan

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Pan**
5. Press **Select**
6. Select the desired value using the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. adjust the parameter in the zoom setting field

9.2.6 Manual adjustment of Scan

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Scan**
5. Press **Select**
6. S elect the desired value using the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. adjust the parameter in the zoom setting field

9.3 Crop

9.3.1 Input Cropping Top

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Crop**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **In Upper**
7. Press **Select**
8. Adjust the Cropping using the rotary knob

Via Shortcut

1. Press **Crop**
2. Turn the rotary knob until the cursor points to **In Upper**
3. Press **Select**
4. Adjust the Cropping using the rotary knob

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. Adjust the cropping by the appropriate slider besides the input window

9.3.2 Input Cropping bottom

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Crop**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **In Lower**
7. Press **Select**
8. Adjust the Cropping using the rotary knob

Via Shortcut

1. Press **Crop**
2. Turn the rotary knob until the cursor points to **In Lower**
3. Press **Select**
4. Adjust the Cropping using the rotary knob

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. Adjust the cropping by the appropriate slider besides the input window

9.3.3 Input Cropping right

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Crop**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **In Right**
7. Press **Select**
8. Adjust the Cropping using the rotary knob

Via Shortcut

1. Press **Crop**
2. Turn the rotary knob until the cursor points to **In Right**
3. Press **Select**
4. Adjust the Cropping using the rotary knob

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. Adjust the cropping by the appropriate slider besides the input window

9.3.4 Input Cropping left

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Crop**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **In Left**
7. Press **Select**
8. Adjust the Cropping using the rotary knob

Via Shortcut

1. Press **Crop**
2. Turn the rotary knob until the cursor points to **In Left**
3. Press **Select**
4. Adjust the Cropping using the rotary knob

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. Adjust the cropping by the appropriate slider besides the input window

9.3.5 Output Cropping top

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Crop**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Out Upper**
7. Press **Select**
8. Adjust the Cropping using the rotary knob

Via Shortcut

1. Press **Crop**
2. Turn the rotary knob until the cursor points to **Out Upper**
3. Press **Select**
4. Adjust the Cropping using the rotary knob

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. Adjust the cropping by the appropriate slider besides the input window.

9.3.6 Output Cropping bottom

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Crop**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Out Lower**
7. Press **Select**
8. Adjust the Cropping using the rotary knob

Via Shortcut

1. Press **Crop**
2. Turn the rotary knob until the cursor points to **Out Lower**
3. Press **Select**
4. Adjust the Cropping using the rotary knob

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. Adjust the cropping by the appropriate slider besides the output window

9.3.7 Output Cropping right

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Crop**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Out Right**
7. Press **Select**
8. Adjust the Cropping using the rotary knob

Via Shortcut

1. Press **Crop**
2. Turn the rotary knob until the cursor points to **Out Right**
3. Press **Select**
4. Adjust the Cropping using the rotary knob

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. Adjust the cropping by the appropriate slider besides the output window

9.3.8 Output Cropping left

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Crop**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Out Left**
7. Press **Select**
8. Adjust the Cropping using the rotary knob

Via Shortcut

1. Press **Crop**
2. Turn the rotary knob until the cursor points to **Out Left**
3. Press **Select**
4. Adjust the Cropping using the rotary knob

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. Adjust the cropping by the appropriate slider besides the output window

9.4 Aspect & Zoom Background color

The varying of geometric parameters like aspect, zoom etc may produce a resulting image that does not fill the available monitor area.
For the regions that are not occupied by the image the systems allows to set a background color.
An independant second color can be setup for the output cropping area.

9.4.1 Output background color zoom area

Via the menu,. the color can be defined as Y Cb Cr coding.
The remote control software additionaly allows the definition as RGB format.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **BG color**
5. Press **Select**
6. Turn the rotary knob until the display shows **zoom BG color** in the upper row and **Y val** or **Cb val** or **Cr val**
7. Press **Select**
8. Set the zoom background color components using the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. Select the color coding format in the background color window
3. Set the zoom background color components

9.4.2 Output background color crop area

Via the menu,. the color can be defined as Y Cb Cr coding.
The remote control software additionaly allows the definition as RGB format.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **BG color**
5. Press **Select**
6. Turn the rotary knob until the display shows **crop BG color** in the upper row and **Y val** or **Cb val** or **Cr val**
7. Press **Select**
8. Set the crop background color components using the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio conversion and Zoom**
2. Select the color coding format in the background color window
3. Set the crop background color components

9.5 Aspect & Zoom Preset

9.5.1 Recalling a Aspect & Zoom default Setup (Predefinition)

The predefinition setup resets all zoom, pan scan and crop settings to zero. The input and output aspect settings will be maintained.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **predef**
5. Press **Select**
6. Select the desired setting by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio Conversion & Zoom**
2. Select the desired predefinition.

9.5.2 Recalling a local Aspect & Zoom Preset

work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **preset**
5. Press **Select**
6. select the desired preset via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio Conversion & Zoom**
2. change setting in the Preset field as desired

9.5.3 Saving a local Aspect & Zoom Preset

Up to 4 local preset configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **ARC**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Save Preset**
5. Press **Select**
6. select the desired Preset via the rotary knob
7. Press **Select**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio Conversion & Zoom**
2. select the desired Preset

10 WSS / VI (Wide Screen Signaling, Video Indexing)

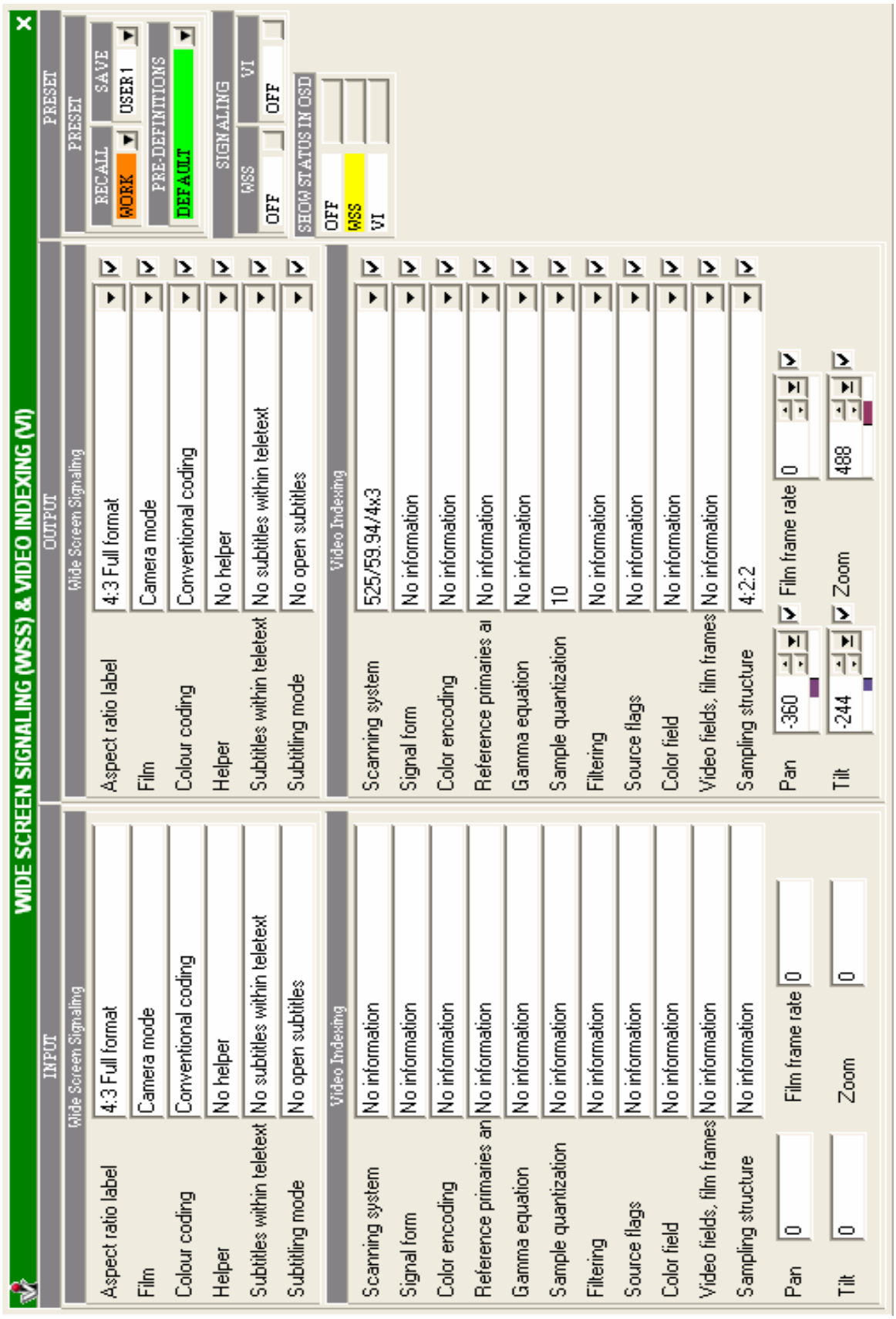
10.1 Introduction

The Aspect 2000D supports line 23 WSS (wide screen signalling) and VI (video indexing) on the input and output.
This enables the system to follow the geometric conditions of the input signal.
The content of the received WSS / VI data packets can be displayed by the onscreen menu or, via the remote control software, on a computer monitor.
WSS / VI is also provided for the system output. So the outgoing signal can be labelled with the appropriate information.

If enabled, the input of the ASPECT 2000D locks to the conditions signalled by the WSS- or VI- data. It follows on a frame by frame base without delay and disturbance.

VI (Video Line Index)
Video Line Index data as defined by SMPTE RP186 is used to encode programme and picture related source information in conjunction with a component digital video signal. The data is encoded in the chrominance signal on lines 11 / 324 for a 50Hz signal or on lines 14 / 277 for a 60Hz signal.
It is dedicated to digital transmission formats and gets discarded when converted to analog.

WSS
WSS is an alternative solution for signalling aspect ratio and related information conforming to ITU BT1119. It uses an analog waveform to carry the data and is located in the first half of line 23 for 50Hz formats. The advantage is, that it withstands /D conversion and so normally will pass through analog and digital systems


WIDE SCREEN SIGNALING (WSS) & VIDEO INDEXING (VI)
INPUT
Wide Screen Signaling
Aspect ratio label
4:3 Full format
Film
Camera mode
Colour coding
Conventional coding
Helper
No helper
Subtitles within teletext
No subtitles within teletext
Subtitling mode
No open subtitles
Video Indexing
Scanning system
No information
Signal form
No information
Color encoding
No information
Reference primaries an
No information
Gamma equation
No information
Sample quantization
No information
Filtering
No information
Source flags
No information
Color field
No information
Video fields, film frames
No information
Sampling structure
No information
Pan
0
Film frame rate
0
Tilt
0
Zoom
0
OUTPUT
Wide Screen Signaling
Aspect ratio label
4:3 Full format
Film
Camera mode
Colour coding
Conventional coding
Helper
No helper
Subtitles within teletext
No subtitles within teletext
Subtitling mode
No open subtitles
Video Indexing
Scanning system
525/59.94/4x3
Signal form
No information
Color encoding
No information
Reference primaries ai
No information
Gamma equation
No information
Sample quantization
10
Filtering
No information
Source flags
No information
Color field
No information
Video fields, film frames
No information
Sampling structure
4:2:2
Pan
-360
Film frame rate
0
Tilt
-244
Zoom
488
PRESET
PRESET
RECALL
WORK
SAVE
USER1
PRE-DEFINITIONS
DEFAULT
SIGNALING
WSS
OFF
VI
OFF
SHOW STATUS IN OSD
OFF
WSS
VI

10.1.1 Output WSS enable

Enables insertion of WSS for 50Hz formats on the system output.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **WSS/VI**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **WSS OUT**
5. Turn the rotary knob to switch between **On** and **Off**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Wide Screen Signalling (WSS) & Video Indexing (VI)**
2. Select WSS **On** or **Off** in the signalling field

10.1.2 Output VI enable

Enables insertion of VI on the system output.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **WSS/VI**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **VI OUT**
5. Press **Select**
6. Turn the rotary knob to switch between **On** and **Off**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Wide Screen Signalling (WSS) & Video Indexing (VI)**
2. Select VI **On** or **Off** in the signalling field

10.1.3 Output WSS / VI status OSD

Enables the display of WSS / VI data.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **WSS/VI**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Status OSD**
5. Press **Select**
6. Turn the rotary knob to switch between **On** and **Off**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Wide Screen Signalling (WSS) & Video Indexing (VI)**
2. Select **On** or **WSS** or **VI** in the show status in OSD field

10.2 WSS / VI Preset

10.2.1 Recalling a WSS / VI default Setup (Predefinition)

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **WSS / VI**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **predef**
5. Press **Select**
6. Select the desired setting by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Wide Screen Signalling (WSS) & Video Indexing (VI)**
2. Select the desired predefinition.

10.2.2 Recalling a local WSS / VI Preset

work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **WSS / VI**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **preset**
5. Press **Select**
6. select the desired preset via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Wide Screen Signalling (WSS) & Video Indexing (VI)**
2. change setting in the Preset field as desired

10.2.3 Saving a local WSS / VI Preset

Up to 4 local preset configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **WSS / VI**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Save Preset**
5. Press **Select**
6. select the desired Preset via the rotary knob
7. Press **Select**

Via Shortcut

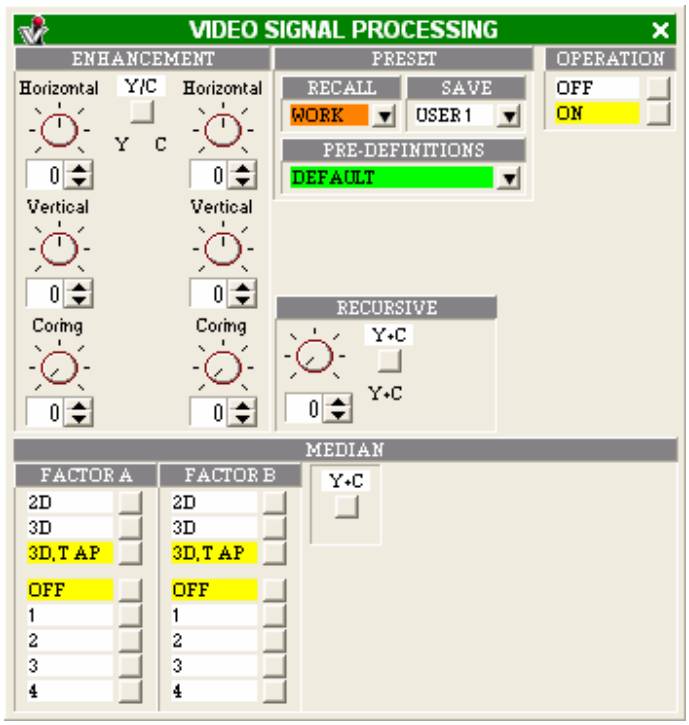
n/a

Via Remote Control Software

1. Open the window **Wide Screen Signalling (WSS) & Video Indexing (VI)**
2. select the desired Preset

11 Video Signal Processing

11.1 General Functions



11.1.1 Filter enable

Using this function allows a direct A/B comparison of the impact a dedicated overall filter setting has to the video signal.

OFF : all filters are switched off (bypass)
ON : filters active

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **VidProc**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Operation**
5. Pressing **Select** toggles between **On** and **Off**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Processing**
2. Select **On** or **Off**

11.2 Enhancement (Aperture Correction)

The enhancement capability is provided to allow a perceived improvement on picture resolution. Independent control over the horizontal and vertical frequencies, as different amounts of enhancement may be appropriate. The use of positive values for enhancement boost certain high frequency components of the signal to provide a visual sharpening of edges and improvement of resolution. If the image is soft, great improvements can be made. If the input image is already good, then the use of too much enhancement will cause ringing on the edges of objects, which is not desirable. The other danger of using too much enhancement is the boosting of noise frequencies.

The use of negative values effectively reduce resolution. This feature is provided to allow the filtering of higher frequency picture correlated noise (i.e. unwanted information that does not move significantly between frames and so will not be reduced by the recursive filtering process as it is impossible to determine whether it is wanted picture information or not).

This type of problem would be present on the input signal and may be caused by a variety of problems in the signal's history, including cross luminance and cross color effects. Use of low pass spatial filtering is not desirable as the problems are reduced at the cost of resolution.

As with other features, to preserve the integrity of the input signal these facilities should only be used to correct for problems (picture correlated noise, soft input picture) and should only be used to a minimum level to generate the required improvement.

Over use of the positive values of enhancement can generate ringing (white lines around objects). Use of the negative values will reduce bandwidth (it is a variable low pass filter) and should only be used when stationary noise components are visible. In certain system situations (e.g. output to a system with a limited bandwidth) it may be useful to use this feature specifically to eliminate information that is likely to cause problems in the subsequent process (pre-processing for some compression systems for example).

In general it is normally acceptable to leave some horizontal and vertical enhancement active (level +2/3) which will give a good, sharp picture from most material without ringing problems. This is particularly useful for composite inputs where a boost in resolution is often beneficial.

The enhancement function improves the high frequency response of the system (if positive parameters are selected). This bears the risk, that also high frequency noise will be amplified and more visible.
To avoid this, a coring can be introduced. It suppresses high frequency components below the selected threshold which normally belong to the noisefloor of the input signal.

The enhancement and coring functions can be used either for luminance and chrominance separately or for both components in the same manner.

11.2.1 Horizontal / Vertical Enhancement

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **VidProc**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Enhance**
5. Press **Select**
6. Turn the rotary knob to **Y (luminance)** or **C (chrominance)** or **Y+C (both components)**
7. Press **Select**
8. adjust **Enhancement** to the desired level using the rotary knob

Via Shortcut

1. Press **horizontal Enhancement** or **vertical Enhancement**
2. The menu entry is **Y+C** If separate adjustment is desired, navigate back in the menu tree
3. adjust **Enhancement** to the desired level level using the rotary knob

Via Remote Control Software

1. Open the window **Video Signal Processing**
2. Select **Y/C (separate adjustment of luminance / chrominance)** or **Y+C**
3. adjust **Enhancement** to the desired fort he horizontal and vertical direction
4. when switching between **Y/C** and **Y+C** the systems keeps the different settings

11.2.2 Coring Enhancement

The coring threshold affects both the horizontal and vertical enhancement filter.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **VidProc**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Enhance**
5. Press **Select**
6. Turn the rotary knob to **Y (luminance)** or **C (chrominance)** or **Y+C (both components)**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **Coring**
9. Press **Select**
10. adjust **Coring** to the desired level using the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Video Signal Processing**
2. Select **Y/C (separate adjustment of luminance / chrominance)** or **Y+C**
3. adjust **Coring** to the desired for value the horizontal and vertical direction
4. when switching between **Y/C** and **Y+C** the systems keeps the different settings

11.3 Noise Reduction, Linear Filters

The system provides two linear noise reduction algorithms.

Recursive Noise reduction	: Linear recursive algorithms, dedicated to statistic noise characteristics (camera noise)
Transversal Filter	: Linear nonrecursive algorithm, dedicated to high frequency noise

The algorithms can be setup separately for luminance and chrominance if necessary.

11.3.1 Recursive Noise Reduction Filter

The application of recursive, frame based, noise reduction filters is very effective in the reduction, or elimination, of noise that is random in nature. This is achieved by feeding the signal back on itself to accumulate more than one frame of picture information. Pixels that are present in all frames can then be identified as useful information. Pixels that change, randomly, can then be treated as noise - and removed. Typical examples of sources that contain random noise that can be effectively treated in this way are camera noise generated when operating under low light (high gain) conditions, film grain, tape noise (analog VCR's) and general video noise from poor sources or multiple generations
As a general rule, only the minimum amount of recursive noise reduction should be applied to the signal to correct the problem. If the unit is left with a high setting made for one source it may be inappropriate for another source that contains less noise or noise with a different footprint. If the setting is too high some smearing of motion occurs. A high setting provides enormous amounts of noise elimination but will cause significant movement problems. These settings are only for use where material is totally unusable at lower settings. At these levels images can be retrieved from signals that are so impaired that they might not even appear to contain real pictures!

The higher levels are included to deal with material that may need to be broadcast but is of very poor quality (i.e. where the content is more important than the quality. This can be the case for news and documentary footage) and to allow very powerful noise reduction to be used in forensic or surveillance applications.

In most cases, a low setting may be constantly applied to give good reduction of minor video noise without impairing resolution of moving parts of the image. This low setting gives a general clean up of the signal, with minimum artifacts. More severe noise should be dealt with by increasing the setting until the noise is just reduced to the required level. If the noise is only in the chrominance or luminance domain then it is best to just remove it in that component.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **VidProc**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Recursive**
5. Press **Select**
6. Turn he rotary knob to **Y (luminance)** or **C (chrominance)** or **Y+C (both components)**
7. Press **Select**
8. Turn the rotary knob to select the appropriate noise reduction factor

Via Shortcut

1. Press **Recursive**.
2. Turn he rotary knob to **Y (luminance)** or **C (chrominance)** or **Y+C (both components)**
3. Press **Select**
4. Turn the rotary knob to select the appropriate noise reduction factor

Via Remote Control Software

1. Open the window **Video Signal Processing**
2. Select **Y/C (separate adjustment of luminance / chrominance)** or **Y+C**
3. adjust the noise reduction factor to the desired value
4. when switching between **Y/C** and **Y+C** the systems keeps the different settings

11.4 Noise Reduction, Nonlinear Filter

Median Filter : Nonlinear filter, dedicated to impulse noise (dropouts, digital noise, scratches)

The median Filter consists out of three combined filters.
Filter A is dedicated to horizontal / vertical structures, while Filter B focuses on diagonal structures.
Each Filter can be set up separately with a 2- or 3- dimensional aperture. The 3- dimensional aperture uses three succeeding frames on the time axis.
The filters allow the setting of anm individual threshold
The outputs of the two filters are combined by a third 3-point median filter. As third component, it uses the original value.
This structure allows very powerful and versatile algorithms.
The filter can be setup separately for luminance and chrominance if necessary.

11.4.1 Median Filter Factor A

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **VidProc**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Median**
5. Press **Select**
6. Turn he rotary knob to **Y (luminance)** or **C (chrominance)** or **Y+C (both components)**
7. Press **Select**
8. Turn he rotary knob to **Factor A**
9. Press **Select** once to setup the threshold, twice to setup 2D/3D
10. Turn the rotary knob to adjust the parameter for orthogonal structures

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Video Signal Processing**
2. Select **Y/C (separate adjustment of luminance / chrominance)** or **Y+C**
3. select the threshold for orthogonal structures
4. when switching between **Y/C** and **Y+C** the systems keeps the different settings

11.4.2 Median Filter Factor B

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **VidProc**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Median**
5. Press **Select**
6. Turn he rotary knob to **Y (luminance)** or **C (chrominance)** or **Y+C (both components)**
7. Press **Select**
8. Turn he rotary knob to **Factor B**
9. Press **Select** once to setup the threshold, twice to setup 2D/3D
10. Turn the rotary knob to adjust the parameter for diagonal structures

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Video Signal Processing**
2. Select **Y/C (separate adjustment of luminance / chrominance)** or **Y+C**
3. select the parameter for diagogonal structures
4. when switching between **Y/C** and **Y+C** the systems keeps the different settings

11.5 Filter Preset

11.5.1 Recalling a Filter default Setup (Predefinition)

The default setup provides a common disable to the filter functions.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **VidProc**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Predef**
5. Press **Select**
6. Select **default** by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Processing**
2. Select **default** in the PRE-Definition field

11.5.2 Recalling a local Filter Preset

work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **VidProc**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Preset**
5. Press **Select**
6. select the desired setting via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Processing**
2. change setting in the Preset field as desired

11.5.3 Saving a local Filter Preset

Up to 4 local preset configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **VidProc**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Save Preset**
5. Press **Select**
6. select the desired Preset via the rotary knob
7. Press **Select**

Via Shortcut

n/a

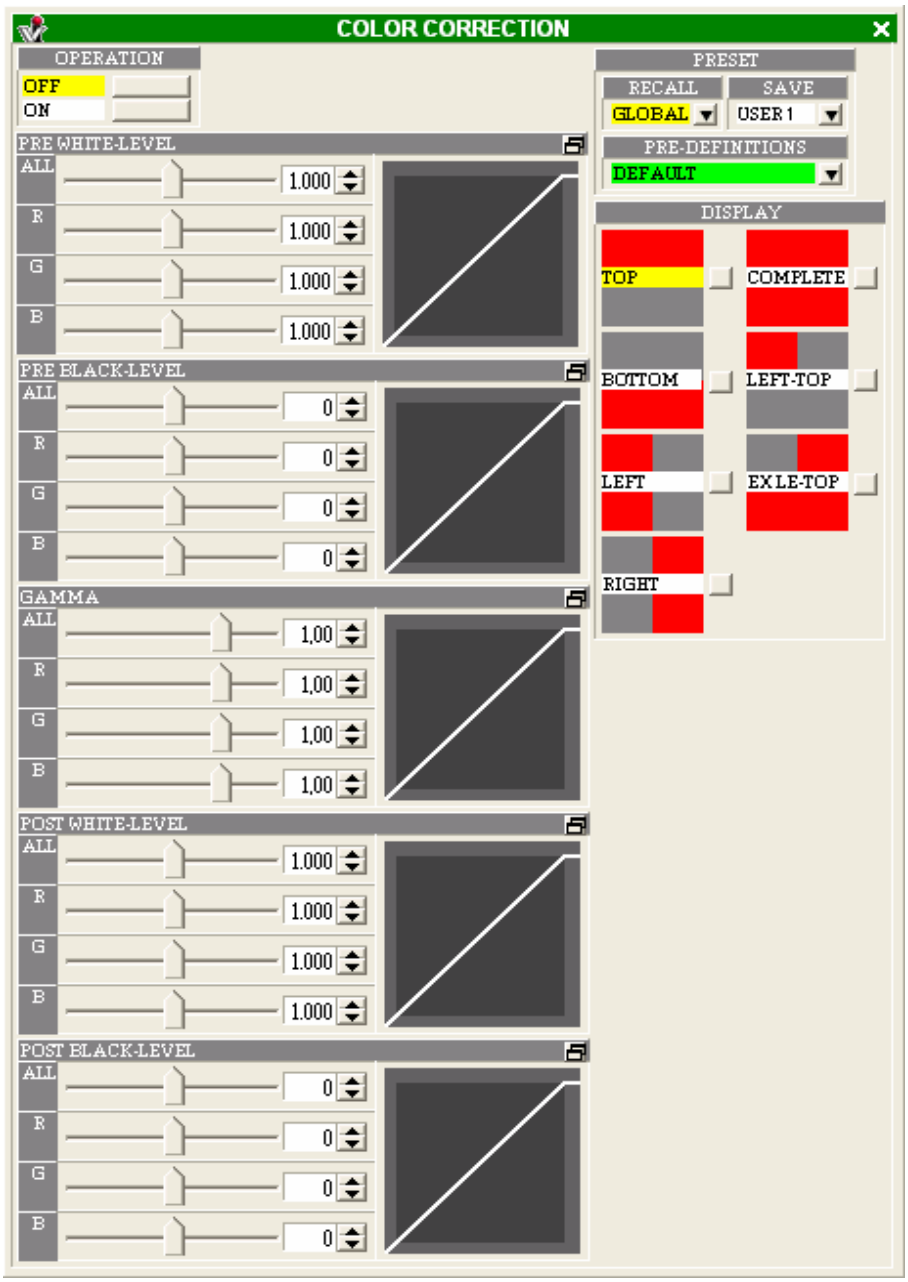
Via Remote Control Software

1. Open the window **filter**
2. select the desired Preset

Color Correction

11.6 Introduction

The ASPECT 2000D can is equipped with a versatile RGB- color correction. The structure of this functional block is shown below..
In a first step, the black- and white level of the raw signal can be realigned. The result is fed into the gamma correction followed by the post black- and white level correction



11.6.1 Color Correction Enable

This allows to bypass the color correction block without affecting its setting.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Color**
3. Press **Select**
4. select **ON** or **OFF** by pressing **Select** again. It acts as a toggle key.

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Color Correction**
2. Select **ON** or **OFF** in the color corrector field

11.6.2 Color Correction pre white level

The settings can be made independantly for each color or, alternatively, for all three colors in the same manner.
The Remote Control Software gives a better overview, so this first step is not necessary.

Via Menu

1. Turn the rotary knob until the cursor points to **Color**
2. Press **Select**
3. Turn the rotary knob until the cursor points to **adjust**
4. Press **Select**
5. Turn the rotary knob until the cursor points to **adj pre white** and the desired color **all, red, green, blue**
6. Press **Select**
7. turn the rotary knob to adjust to the desired value

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Color Correction**
2. click on the upper right symbol in the window **Prewhitelevel**
3. adjust the desired parameter

11.6.3 Color Correction pre black level

The settings can be made independantly for each color or, alternatively, for all three colors in the same manner.
The Remote Control Software gives a better overview, so this first step is not necessary.

Via Menu

1. Turn the rotary knob until the cursor points to **Color**
2. Press **Select**
3. Turn the rotary knob until the cursor points to **adjust**
4. Press **Select**
5. Turn the rotary knob until the cursor points to **adj pre black** and the desired color **all, red, green, blue**
6. Press **Select**
7. turn the rotary knob to adjust to the desired value

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Color Correction**
2. click on the upper right symbol in the window **Preblacklevel**
3. adjust the desired parameter

11.6.4 Color Correction gamma

The settings can be made independantly for each color or, alternatively, for all three colors in the same manner.
The Remote Control Software gives a better overview, so this first step is not necessary.
Gamma from 0,5 to 1,5 is supported.

Via Menu

1. Turn the rotary knob until the cursor points to **Color**
2. Press **Select**
3. Turn the rotary knob until the cursor points to **adjust**
4. Press **Select**
5. Turn the rotary knob until the cursor points to **gamma** and the desired color **all, red, green, blue**
6. Press **Select**
7. turn the rotary knob to adjust to the desired value

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Color Correction**
2. click on the upper right symbol in the window **gamma**
3. adjust the desired parameter

11.6.5 Color Correction post white level

The settings can be made independantly for each color or, alternatively, for all three colors in the same manner.
The Remote Control Software gives a better overview, so this first step is not necessary.

Via Menu

1. Turn the rotary knob until the cursor points to **Color**
2. Press **Select**
3. Turn the rotary knob until the cursor points to **adjust**
4. Press **Select**
5. Turn the rotary knob until the cursor points to **adj post white** and the desired color **all, red, green, blue**
6. Press **Select**
7. turn the rotary knob to adjust to the desired value

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Color Correction**
2. click on the upper right symbol in the window **postwhitelevel**
3. adjust the desired parameter

11.6.6 Color Correction post black level

The settings can be made independantly for each color or, alternatively, for all three colors in the same manner.
The Remote Control Software gives a better overview, so this first step is not necessary.

Via Menu

1. Turn the rotary knob until the cursor points to **Color**
2. Press **Select**
3. Turn the rotary knob until the cursor points to **adjust**
4. Press **Select**
5. Turn the rotary knob until the cursor points to **adj post black** and the desired color **all, red, green, blue**
6. Press **Select**
7. turn the rotary knob to adjust to the desired value

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Color Correction**
2. click on the upper right symbol in the window **postblacklevel**
3. adjust the desired parameter

11.6.7 Color Correction display

To observe the impact of parameter change, the screen can be split in various configurations.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Color**
3. Press **Select**
4. select **Display** by turning the rotary knob
5. Press **Select**
6. select the desired display setting

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Color Correction**
2. select the desired display setting in the **Display** window

11.7 Preset Color Correction

11.7.1 Recalling a color correction default Setup (Predefinition)

The default setup provides a common disable to the color correction functions.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **color**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Predef**
5. Press **Select**
6. Select **default** by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **color correction**
2. Select **default** in the PRE-Definition field

11.7.2 Recalling a local color correction Preset

work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **color**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Preset**
5. Press **Select**
6. select the desired setting via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **color correction**
2. change setting in the Preset field as desired

11.7.3 Saving a local color correction Preset

Up to 4 local preset configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **color**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Save Preset**
5. Press **Select**
6. select the desired Preset via the rotary knob
7. Press **Select**

Via Shortcut

n/a

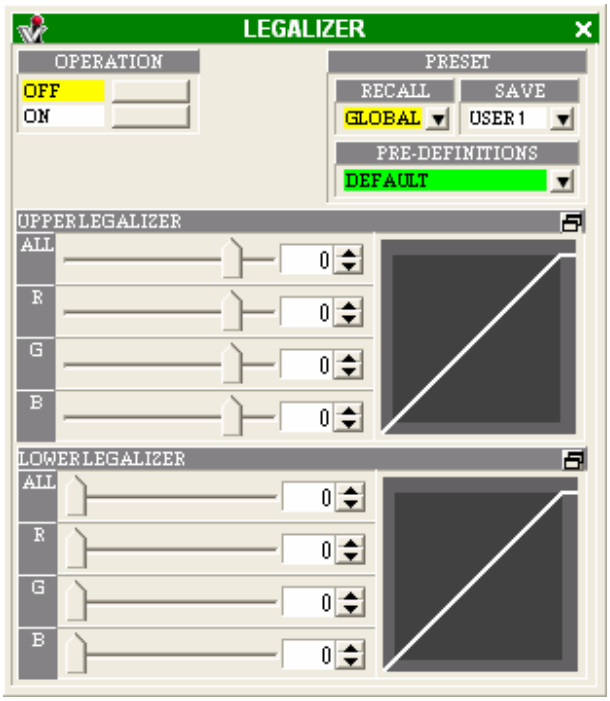
Via Remote Control Software

1. Open the window **color correction**
2. select the desired Preset

12 Legalizer

12.1 Introduction

The ASPECT 2000D includes a fully programmable RGB legalizer.



12.1.1 Legalizer Enable

This allows to bypass the legalizer block without affecting its setting.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Legalizer**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Operation**
5. Press **Select**
6. select **ON** or **OFF** by turning the rotary knob.

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Legalizer**
2. Select **ON** or **OFF** in the operation field

12.1.2 Legalizer upper limit

The standard maximum value is 940

Via Menu

1. Turn the rotary knob until the cursor points to **Legalizer**
2. Press **Select**
3. Turn the rotary knob until the cursor points to **adjust**
4. Press **Select**
5. Turn the rotary knob until the cursor points to **upper all, upper R, upper G, upper B**
6. Press **Select**
7. turn the rotary knob to adjust to the desired value

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **legalizer**
2. click on the upper right symbol in the window **upperlegalizer**
3. adjust the desired parameter

12.1.3 Legalizer lower limit

The standard minimum value is 64

Via Menu

1. Turn the rotary knob until the cursor points to **Legalizer**
2. Press **Select**
3. Turn the rotary knob until the cursor points to **adjust**
4. Press **Select**
5. Turn the rotary knob until the cursor points to **lower all, lower R, lower G, lower B**
6. Press **Select**
7. turn the rotary knob to adjust to the desired value

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **legalizer**
2. click on the upper right symbol in the window **lowerlegalizer**
3. adjust the desired parameter

12.2 Preset Legalizer

12.2.1 Recalling a Legalizer default Setup (Predefinition)

The default setup provides a common disable to the legalizer.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **legalizer**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Predef**
5. Press **Select**
6. Select **default** by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **legalizer**
2. Select **default** in the PRE-Definition field

12.2.2 Recalling a local legalizer Preset

work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **legalizer**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Preset**
5. Press **Select**
6. select the desired setting via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **legalizer**
2. change setting in the Preset field as desired

12.2.3 Saving a local legalizer Preset

Up to 4 local preset configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **legalizer**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Save Preset**
5. Press **Select**
6. select the desired Preset via the rotary knob
7. Press **Select**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **legalizer**
2. select the desired Preset

13 Audio Processing

13.1 Introduction

The complexity of routing, distributing and processing audio causes increasing problems in maintaining the audio-to-video delay. This problem happens if audio and video is processed separately. Nothing is worse than lip-sync problems.

The ASPECT 2000D gives you a variety of options to work with audio.

①	Audio Data Redistribution	
②	SDI Interface	- Embedded Audio Support for 32kHz / 44.1kHz / 48 kHz
③	external Audio Interface	- AES/EBU Standard - S/PDIF Standard - Analog Standard
④	DV Interface	- Embedded Audio Support - Audio Dropout Compensation - Audio Resampling

One of the important advantages of SDI (Serial Digital Interface) is the ability to embed (multiplex) several channels of digital audio in the digital video signal. This is particularly useful to assure that the audio is associated with the appropriate video.

The SMPTE 272M standard defines the mapping of AES/EBU digital audio data and associated control information into the ancillary data space of serial digital video conforming to ANSI/SMPTE 259M. The standard provides a minimum of two audio channels and a maximum of 16 audio channels based on the available ancillary data in a given format (four channels maximum for composite digital).

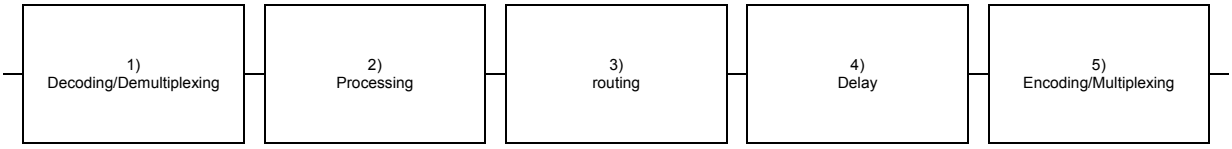
GROUP 1	CHANNEL 1
	CHANNEL 2
	CHANNEL 3
	CHANNEL 4
GROUP 2	CHANNEL 1
	CHANNEL 2
	CHANNEL 3
	CHANNEL 4
GROUP 3	CHANNEL 1
	CHANNEL 2
	CHANNEL 3
	CHANNEL 4
GROUP 4	CHANNEL 1
	CHANNEL 2
	CHANNEL 3
	CHANNEL 4

The professional interface format for digital audio is specified in the AES document AES3-1992. This is often referred to as "AES3". It is a serial data format carrying two channels of audio, which can be left and right, sum and difference or two independent mono signals. The data format has provision for up to twenty-four bits per sample with sampling frequencies of 32 kHz, 44.1 kHz, and 48 kHz.

AES/EBU carries two channels, typically a stereo signal (left and right). Audio data is embedded in a group format. A group is defined as two AES/EBU signals or four monaural channels. In the 4:2:2 format there is room for 4 groups of AES/EBU channels or 16 channels of monaural audio in the SDI signal.

The processing of audio information within the ASPECT 2000D is completely independant of the handling of video signals.
The audio is separated from the video signal at the input of the system, passes the processing chain and is added to the video at the system output.

The processing is done according to 13-1.



13-1

The audio processing is mainly based on a powerfull routing matrix, which connects the signal from different sources / destinations as SDI, Firewire and the embedding / deembedding of 4 analog / AES / SPDIF channels. It supports 22 input channels and 22 channels on the output.
The system has an integrated delay unit, which primarily is used to maintain the lip sync on the output. It further provides adjustable delay up to 1sec for all 22 output channels imdependently.
It can be set to a shorter delay than the video processing, so even negative delay adjustment is possible.

13.2 Audio Input

13.2.1 Input Mute

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Processing**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **mute**
7. Press **Select**
8. Select **ON** or **OFF**

Via Shortcut

1. Press **Mute** in the audio field. The key acts as toggle key

Via Remote Control Software

1. Open the window **Audio Processing 1/2**
2. Select **ON** or **OFF** for mute

13.2.2 Audio Input Master Level

The master level function applies to all input channels simultaneously.

Range -∞ …. +6dB

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Processing**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Master**
7. Press **Select**
8. adjust the level by turning the rotary knob

Via Shortcut

1. Press **Audio Level**
2. adjust the level by turning the rotary knob

Via Remote Control Software

1. Open the window **Audio Processing 1/2**
2. adjust the level using the **MAIN** slider

13.2.3 Audio Input Gain & Level

The Gain- and Level- functions allow the adjustment for single audio channels independantly. They are available only within Remote Control Software and act like a standard mixer.

Via Menu

n/a

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Audio Processing 1/2**
2. The rotary knobs in the upper part of the mixer act as gain controller. The level adjustment is done via the sliders as usual. The numbers refer to the input channel.

13.2.4 Audio Input XLR select analog / AES

The system supports analog and digital external audio, which can be embedded into the output SDI data stream.
The input has to be set to one of these two formats.
This setting is not necessary on the AES / analog output, both formats are provided in parallel.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Processing**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **EXT IN**
7. Press **Select**
8. Turn the rotary knob to select between **analoge** and **AES**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Audio Processing**
2. click **analog** or **AES** in the XLR field

13.2.5 DV Audio Resampling Input

The Firewire input supports the audio sample rates 32kHz, 44.1kHz and 48kHz.
To connect to the studio world, it is necessary to convert to 48kHz on the system output.
For the most common sample rates 32kHz and 48kHz, the system contains a resample filter fort he conversion.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Processing**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Resample**
7. Press **Select**
8. select **ON** or **OFF** by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Audio Processing**
2. click **off** or **32kHz** or **48kHz** in the DV field

13.2.6 DV Audio Input channel select

The DV format allows the processing of two audio channel pairs for the sample rate 32kHz.
The ASPECT 2000D supports one input channel pair, so occasionally it has to be selected which channel pair shall be processed.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Processing**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Channel**
7. Press **Select**
8. turn the rotary knob to select channel **1/2** or **3/4**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Audio Processing**
2. select channel **1/2** or **3/4** on the DV tab

13.3 Preset Audio Input

13.3.1 Recalling a Audio Gain default Setup (Predefinition)

The default audio gain setup forces the gain of all channels to 0dB.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Processing**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Gain-Predef**
7. Press **Select**
8. Select **default** by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **audio processing**
2. Select **default** in the Gain-Predefinition field

13.3.2 Recalling a Audio Level default Setup (Predefinition)

The default audio level setup forces the level sliders of all channels to 0dB.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **processing**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Level-Predef**
7. Press **Select**
8. Select **default** by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **audio processing**
2. Select **default** in the Level-Predefinition field

13.3.3 Recalling a local audio input processing Preset

The local Preset covers level and gain settings.
work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **processing**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Preset**
7. Press **Select**
8. select the desired preset via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **audio processing**
2. change setting in the Preset field as desired

13.3.4 Saving a local audio input processing Preset

The local Preset covers level and gain settings.
Up to 4 local preset configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **processing**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Save Preset**
7. Press **Select**
8. select the desired Preset via the rotary knob
9. Press **Select**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **audio processing**
2. select the desired Preset

13.4 Audio Delay

There are various possibilities to setup the delay of an audio channel.
Master delay : common delay adjustment for all channels
Channel delay : allows delay adjustment channel by channel
Automatic delay : automatically corrects the delay of the video path

13.4.1 Audio Auto Delay

It is recommended to enable the automatic delay correction as a default setting. This prevents the user from accidentily loosing lip sync.
When operating the system in non auto mode, please keep in mind that the video delay may vary with the mode of operation.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Delay**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Autodelay**
7. Press **Select**
8. Select **ON** or **OFF**

Via Shortcut

1. Press **Audio Delay**
2. Turn the rotary knob until the cursor points to **Autodelay**
3. Press **Select**
4. Select **ON** or **OFF**

Via Remote Control Software

1. Open the window **Audio Delay**
2. click **Auto** in the master delay field. This is a toggle function. When yellow, automatic delay is enabled

13.4.2 Audio Master Delay

The master delay allows the common adjustment of the delay of all output channels.
If the automatic delay is selected, it shows the current system delay.
Adjustment of the master delay is only possible when not in auto mode.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Delay**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Delay**
7. Press **Select**
8. Adjust the delay using the rotary knob

Via Shortcut

1. Press **Audio Delay**
2. Turn the rotary knob until the cursor points to **Delay**
3. Press **Select**
4. Adjust the delay using the rotary knob

Via Remote Control Software

1. Open the window **Audio Delay**
2. Adjust the delay using the knob in the master delay field

13.4.3 Separate Audio channel Delay

Sometimes it is necessary to adjust the audio delay separately for dedicated channels
This function is available only via Remote Control Software.

Via Menu

n/a

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Audio Delay**
2. Adjust the delay using the knobs in the fields SDI delay and XLR delay resp.

13.5 Preset Audio Delay

13.5.1 Recalling a Audio Delay default Setup (Predefinition)

The default audio delay setup forces the audio master delay to automatic mode and all single channel delay settings to zero.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **delay**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Predef**
7. Press **Select**
8. Select **default** by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **audio delay**
2. Select **default** in the Predefinition field

13.5.2 Recalling a local audio delay Preset

work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **delay**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Preset**
7. Press **Select**
8. select the desired preset via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **audio delay**
2. change setting in the Preset field as desired

13.5.3 Saving a local audio delay Preset

Up to 4 local preset configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **delay**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Save Preset**
7. Press **Select**
8. select the desired Preset via the rotary knob
9. Press **Select**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **audio delay**
2. select the desired Preset

13.6 Audio Output

13.6.1 Operating the Audio Routing

The system contains a audio routing matrix, which gives the capabilty to freely rearrange the audio channels on the output.
This function is only available via the Remote Control.

Via Menu

n/a

Via Shortcut

n/a

Via Remote Control Software

Open the window Audio Output
The routing matrix is organized in four tabs (SDI, XLR, DV, Monitor). The available input channels are located leftside, the output channels at the bottom.
The colour coding of the groups conforms to the gain/level and delay windows.
Underrneath the matrix checkboxes for the muting are arranged.

13.6.2 Audio Embedder Sequence

In general, the arrangement of the audio channels in the ancilliary data space allows a high degree of flexibility. But in the meantime, very few configurations have been established as industrie standards. The ASPECT 2000D provides two different embedding sequences.
Sequence A allows the support of different sampling rates for the two channel pairs within one audio group. This is a special arrangement which sometimes may lead to incompatibility with external devices.
Sequence B allows only one sample rate per audio group. It is a more common arrangement which should be selected as default.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Output**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Sequence**
7. Press **Select**
8. Select **SEQ A** or **SEQ B** as desired via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Audio Output**
2. select the SDI tab
3. select the audio sequence **Seq A** or **Seq B** in the option field

13.6.3 Audio Control Packet

As the name AUDIO CONTROL PACKET indicates, this data packet contains audio control information. The audio control packet is transmitted once per field at a fixed position. The control packet is optional for the default-sampling rate of 48 kHz synchronous audio. It must be transmitted for all other modes. Each of the four audio groups has its own control packet. This mode can be disabled if not required or the receiving unit can not handle this mode.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Output**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **CTLPACKETS**
7. Press **Select**
8. Select **ON** or **OFF** via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Audio Output**
2. select the SDI tab
3. select **CPACKS** in the option field. When yellow, controlpackets are enabled

13.6.4 DV Audio Resampling Output

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Output**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Resample**
7. Press **Select**
8. select **ON** or **OFF** by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Audio Output**
2. select the DV tab
3. click **off** or **32kHz** or **48kHz** on the DV tab

13.6.5 DV Audio Output channel select

The system supports one audio pair on the DV output

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Output**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Channel**
7. Press **Select**
8. turn the rotary knob to select the desired channel pair

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Audio output**
2. select the DV tab
3. select the desired channel pair on the DV tab

13.7 Preset Audio Output

13.7.1 Recalling an Audio SDI Output default Setup (Predefinition)

There are 5 predefined setup configurations available for the SDI audio output.

a) Routing matrix set to 1:1 (all input channels are directly routed to the corresponding output channels. No shuffling)
b) Embedding of the 4 external (XLR) input channels into ouput channel 1 .. 4 (audio group 1). Remaining output channels taken from the corresponding inputs.
c) As b), but embedding in output channel 5 .. 8 (audiogroup 2)
d) As b), but embedding in output channel 9 .. 12 (audiogroup 3)
e) As b), but embedding in output channel 13 .. 16 (audiogroup 4)

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **output**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **SDI**
7. Press **Select**
8. Select the desired configuration by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **audio output**
2. Select the tab **SDI**
3. Select the desired configuration in the Predefinition field

13.7.2 Recalling an Audio XLR Output (deembedding) default Setup (Predefinition)

There are 5 predefined setup configurations available for the SDI audio output.
a) Deembedding of SDI input channel 1 .. 4 (audiogruop 1)
b) Deembedding of SDI input channel 5 .. 8 (audiogruop 2)
c) Deembedding of SDI input channel 9 .. 12 (audiogruop 3)
d) Deembedding of SDI input channel 13 .. 16 (audiogruop 4)
e) Routing of external (XLR) input channel 1 .. 4 to XLR output channel 1 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **output**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **EXT**
7. Press **Select**
8. Select the desired configuration by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **audio output**
2. Select the tab **XLR**
3. Select the desired configuration in the Predefinition field

13.7.3 Recalling an Audio DV Output default Setup (Predefinition)

The DV (Firewire) output supports 2 audio channels which can be selected out of the 16 SDI input channels and the 4 external channels.
There are 10 predefined setup configurations available.

a) SDI input channel 1,2
b) SDI input channel 3,4
c) SDI input channel 5,6
d) SDI input channel 7,8
e) SDI input channel 9,10
f) SDI input channel 11,12
g) SDI input channel 13,14
h) SDI input channel 15,16
i) External input channel 1,2
j) External input channel 3,4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **output**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **DV**
7. Press **Select**
8. Select the desired configuration by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **audio output**
2. Select the tab **DV**
3. Select the desired configuration in the Predefinition field

13.7.4 Recalling a local output Preset

work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **output**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Preset**
7. Press **Select**
8. select the desired preset via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **audio output**
2. change setting in the Preset field as desired

13.7.5 Saving a local audio output Preset

Up to 4 local preset configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **audio**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **output**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **Save Preset**
7. Press **Select**
8. select the desired Preset via the rotary knob
9. Press **Select**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **audio output**
2. select the desired Preset

14 Cursors

14.1 Introduction

The ASPECT 2000D provides two cursors which can be inserted into the output signal.

14.1.1 Cursor enable

The two cursors can be set either to crosshair (H+V) or separate horizontal (H) or vertical (V).

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Cursor**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **State**
5. Press **Select**
6. select configuration by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect Ratio Conversion & Zoom**
2. select configuration in the cursor settings field

14.1.2 Cursor position display

The position of the cursorlines can be shown via the readout. The persistance is selectable.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Cursor**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Display**
5. Press **Select**
6. select the parameter by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect Ratio Conversion & Zoom**
2. select configuration in the cursor settings field

14.1.3 Cursor position horizontal, left

Numbers given as Y pixel.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Cursor**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Pos Left**
5. Press **Select**
6. select the position by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect Ratio Conversion & Zoom**
2. select the desired position for **Cursor 1** or **Cursor 2**

14.1.4 Cursor position horizontal, right

Numbers given as Y pixel.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Cursor**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Pos right**
5. Press **Select**
6. select the position by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect Ratio Conversion & Zoom**
2. select the desired position for **Cursor 1** or **Cursor 2**

14.1.5 Cursor position vertical, top

Numbers given as lines / field.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Cursor**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Pos Upper**
5. Press **Select**
6. select the position by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect Ratio Conversion & Zoom**
2. select the desired position for **Cursor 1** or **Cursor 2**

14.1.6 Cursor position vertical, bottom

Numbers given as lines / field.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Cursor**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Pos Lower**
5. Press **Select**
6. select the position by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect Ratio Conversion & Zoom**
2. select the desired position for **Cursor 1** or **Cursor 2**

14.1.7 Cursor Mode

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Cursor**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Mode**
5. Press **Select**
6. select the desired shape by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect Ratio Conversion & Zoom**
2. select the desired shape in the cursor settings field

14.2 Cursor Preset

14.2.1 Recalling a Cursor default Setup (Predefinition)

There two standard settings available. Numbers given as Y pixel / line / field
b) Safe area (Cursor 1 set to H/V = 35 / 7, Cursor 2 set to H/V = 684 / 236).
c) Title area (Cursor 1 set to H/V = 70 / 12, Cursor 2 set to H/V = 649 / 231).

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **cursor**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **predef**
5. Press **Select**
6. Select the desired setting by turning the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio Conversion & Zoom**
2. Select the desired predefinition.

14.2.2 Recalling a local Cursor Preset

work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **cursor**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **preset**
5. Press **Select**
6. select the desired preset via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio Conversion & Zoom**
2. change setting in the Preset field as desired

14.2.3 Saving a local cursor Preset

Up to 4 local preset configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **cursor**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Save Preset**
5. Press **Select**
6. select the desired Preset via the rotary knob
7. Press **Select**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio Conversion & Zoom**
2. select the desired Preset

15 Timecode

15.1 Introduction

The ASPECT 2000D provides a powerful subsystem to read, generate, insert and display timecode information.

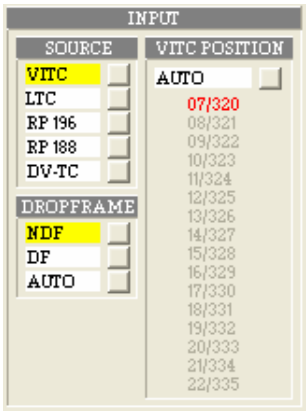
The following formats are supported on the input and output :

- VITC (SMPTE 12M)
- LTC (SMPTE 12M)
- RP196 (SMPTE RP 196)
- RP188 (SMPTE RP 188, ITU BT1366)
- DV / Firewire

The timecode reader, generator, inserter and display can be configured independently.
To simplify the operation, the timecode subsystem offers various common settings.
But by using the expert mode, it allows the setup of sophisticated procedures.

15.2 Timecode- Reader

The timecode reader gets its input signal either from the LTC input or via the selected video source.



VITC The VITC is transmitted in the VBI of the incoming video signal. It should conform to SMPTE-12M. The reader either automatically detects the presence of a VITC signal in the available area or can be set manually to decode a dedicated line.
If (in automatic mode) more than one line carry valid data, the first line will be processed.
The remote control software indicates the VBI lines which show valid VITC as black and the processed line in green.

RP188 The RP188 format is described by SMPTE RP 188 and ITU BT 1366. It is a digital format which is available only on the SDI input. The active line is always detected automatically.

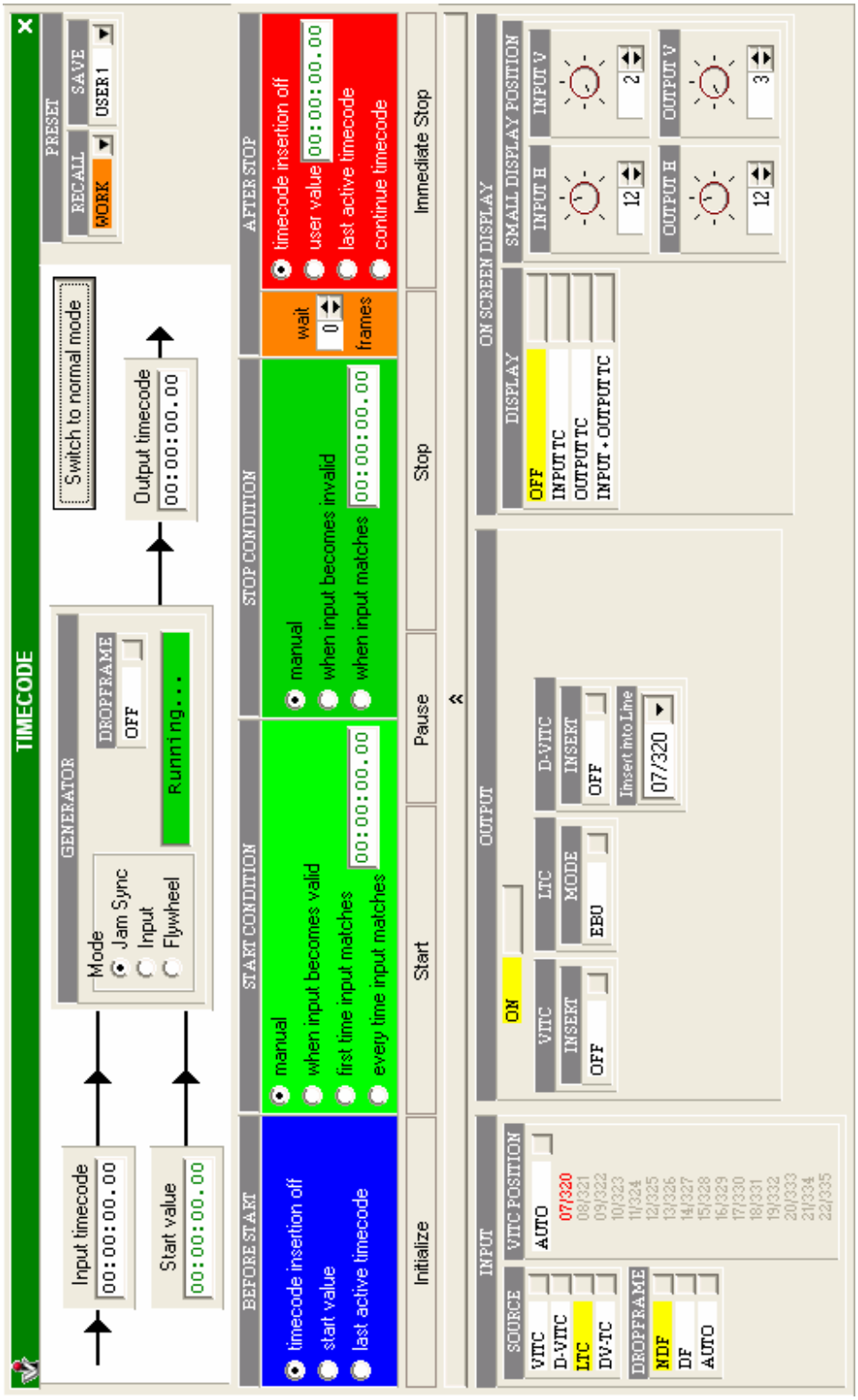
RP196 The RP196 format is another digital representation of timecode described by SMPTE RP 196. It is a digital format which is available only on the SDI input. The active line is always detected automatically.

LTC The LTC is a common analog format which is not part of the video signal. It is described in SMPTE 12M.

DV-TC DV-TC is a special fromat only available with the DV / Firewire input.

All mentioned formats support dropframe for 59,94 Hz input signals. Normally the input should be set to automatic dropframe detection, but under special conditions it can be useful to force the format manually.

The remote control software displays the decoded timecode in the reader timecode window.
Please note: The displayed timecode may appear discontinous. This usually is the case, if the computer or the network slows down due to heavy load


TIMECODE
PRESET
RECALL
SAVE
WORK
USER 1
GENERATOR
Mode
Jam Sync
Input
Flywheel
DROPFRAME
OFF
Running...
Switch to normal mode
Input timecode
00:00:00.00
Start value
00:00:00.00
Output timecode
00:00:00.00
BEFORE START
timecode insertion off
start value
last active timecode
START CONDITION
manual
when input becomes valid
first time input matches
every time input matches
00:00:00.00
STOP CONDITION
manual
when input becomes invalid
when input matches
00:00:00.00
AFTER STOP
timecode insertion off
user value
00:00:00.00
last active timecode
continue timecode
wait
0
frames
Initialize
Start
Pause
Stop
Immediate Stop
INPUT
SOURCE
VITC
D-VITC
LTC
DV-TC
VITC POSITION
AUTO
07/320
08/321
09/322
10/323
11/324
12/325
13/326
14/327
15/328
16/329
17/330
18/331
19/332
20/333
21/334
22/335
DROPFRAME
NDF
DF
AUTO
OUTPUT
ON
VITC
INSERT
OFF
LTC
MODE
EBU
D-VITC
INSERT
OFF
Insert into Line
07/320
ON SCREEN DISPLAY
DISPLAY
OFF
INPUT TC
OUTPUT TC
INPUT + OUTPUT TC
SMALL DISPLAY POSITION
INPUT H
12
INPUT V
2
OUTPUT H
12
OUTPUT V
3

15.2.1 Timecode Reader Source select

The source select works context sensitive, because dependant of the video input signal, some timecode sources are not available.

LTC - always selectable
VITC - only available for SDI video input
RP196 - only available for SDI video input
RP188 - only available for SDI video input
DV-TC - only available for DV (Firewire) video input

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **reader**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **source**
7. Press **Select**
8. select the desired source via the rotary knob

Via Shortcut

1. Press **Timecode**
2. Turn the rotary knob until the cursor points to **reader**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **source**
5. Press **Select**
6. select the desired source via the rotary knob

Via Remote Control Software

1. Open the window **Timecode**
2. activate the extended window
3. select the desired Source in the reader section

15.2.2 Timecode Reader VITC line select auto

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **reader**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **VITC**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **autosel**
9. Press **Select**
10. select **auto** or **manual** via the rotary knob

Via Shortcut

1. Press **Timecode**
2. Turn the rotary knob until the cursor points to **reader**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **VITC**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **autosel**
7. Press **Select**
8. select **auto** or **manual** via the rotary knob

Via Remote Control Software

1. Open the window **Timecode**
2. activate the extended window
3. select **auto** or **manual** in the VITC position field

15.2.3 Timecode Reader manual VITC line select

Allows the manual line select on the VITC input.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **reader**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **VITC**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **INPOS**
9. Press **Select**
10. select the desired line viia the rotary knob

Via Shortcut

1. Press **Timecode**
2. Turn the rotary knob until the cursor points to **reader**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **VITC**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **INPOS**
7. Press **Select**
8. select the desired line viia the rotary knob

Via Remote Control Software

1. Open the window **Timecode**
2. activate the extended window
3. select the desired line number out of the list. Lines marked in black carry valid VITC

15.2.4 Keyboard setting of the reader dropframe mode

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **reader**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **dropframe**
7. Press **Select**
8. set **ON** or **OFF** by turning the rotary knob

Via Shortcut

1. Press **timecode**
2. Turn the rotary knob until the cursor points to **reader**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **dropframe**
5. Press **Select**
6. set **ON** or **OFF** by turning the rotary knob

15.3 Timecode- Inserter

The timecode inserter adds the information prduced by the timecode generator into the output video stream.
The system supports the following formats :
VITC - only available on the SDI video output
RP196 - only available on the SDI video output
RP188 - only available on the SDI video output
DV-TC - only available on the DV (Firewire) video output

The LTC timcode is always available.

15.3.1 Timecode inserter MASTER activate

General enable of TC insertion into the outgoing video signals.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **inserter**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **MASTER EN**
7. Press **Select**
8. select **On** or **Off** via the rotary knob

Via Shortcut

1. Press **Timecode**
2. Turn the rotary knob until the cursor points to **inserter**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **MASTER EN**
5. Press **Select**
6. select **On** or **Off** via the rotary knob

Via Remote Control Software

1. Open the window **Timecode**
2. activate the extended window
3. select **On** or **Off** in the inserter field

15.3.2 Timecode inserter VITC activate

Enable of the VITC insertion into the outgoing video signals.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **inserter**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **VITC**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **activate**
9. Press **Select**
10. select **On** or **Off** via the rotary knob

Via Shortcut

1. Press **Timecode**
2. Turn the rotary knob until the cursor points to **inserter**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **VITC**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **activate**
7. Press **Select**
8. select **On** or **Off** via the rotary knob

Via Remote Control Software

1. Open the window **Timecode**
2. activate the extended window
3. select **On** or **Off** in the inserter field

15.3.3 Timecode inserter manual VITC line select

Select the lines for VITC insertion.
There is an identical menu in the **VBI** menu. The setting can be done via both menues in the same manner.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **inserter**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **VITC**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **OUTPOS**
9. Press **Select**
10. select the desired lines

Via Shortcut

1. Press **Timecode**
2. Turn the rotary knob until the cursor points to **reader**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **VITC**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **OUTPOS**
7. Press **Select**
8. select the desired lines

Via Remote Control Software

1. Open the window **Timecode**
2. activate the extended window
3. select the desired lines in the inserter field

15.3.4 Timecode inserter RP196 activate

Enable of the RP196 insertion into the outgoing video signals.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **inserter**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **RP196**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **activate**
9. Press **Select**
10. select **On** or **Off** via the rotary knob

Via Shortcut

1. Press **Timecode**
2. Turn the rotary knob until the cursor points to **reader**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **RP196**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **activate**
7. Press **Select**
8. select **On** or **Off** via the rotary knob

Via Remote Control Software

1. Open the window **Timecode**
2. activate the extended window
3. select **On** or **Off** in the inserter field

15.3.5 Timecode inserter manual RP196 line select

Select the line for RP196 insertion.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **inserter**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **RP196**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **OUTPOS**
9. Press **Select**
10. select the desired line

Via Shortcut

1. Press **Timecode**
2. Turn the rotary knob until the cursor points to **reader**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **RP196**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **OUTPOS**
7. Press **Select**
8. select the desired line

Via Remote Control Software

1. Open the window **Timecode**
2. activate the extended window
3. select the desired line in the inserter field

15.3.6 Timecode inserter RP188 activate

Enable of the RP188 insertion into the outgoing video signals.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **inserter**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **RP188**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **activate**
9. Press **Select**
10. select **On** or **Off** via the rotary knob

Via Shortcut

1. Press **Timecode**
2. Turn the rotary knob until the cursor points to **reader**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **RP188**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **activate**
7. Press **Select**
8. select **On** or **Off** via the rotary knob

Via Remote Control Software

1. Open the window **Timecode**
2. activate the extended window
3. select **On** or **Off** in the inserter field

15.3.7 Timecode inserter manual RP188 line select

Select the line for RP188 insertion.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **inserter**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **RP188**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **OUTPOS**
9. Press **Select**
10. select the desired line

Via Shortcut

1. Press **Timecode**
2. Turn the rotary knob until the cursor points to **reader**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **RP188**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **OUTPOS**
7. Press **Select**
8. select the desired line

Via Remote Control Software

1. Open the window **Timecode**
2. activate the extended window
3. select the desired line in the inserter field

15.3.8 Timecode inserter DV-TC activate

Enable of the DV-TC insertion into the outgoing DV signal.
The distribution of time code data into the DV stream is defined by the IEEE standard.
So, no further line selection is necessary.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **inserter**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **DV-TC**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **activate**
9. Press **Select**
10. select **On** or **Off** via the rotary knob

Via Shortcut

1. Press **Timecode**
2. Turn the rotary knob until the cursor points to **reader**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **DV-TC**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **activate**
7. Press **Select**
8. select **On** or **Off** via the rotary knob

Via Remote Control Software

1. Open the window **Timecode**
2. activate the extended window
3. select **On** or **Off** in the inserter field

15.3.9 Timecode inserter LTC format

The LTC output supports both EBU and SMPTE format

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **inserter**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **LTC**
7. Press **Select**
8. Turn the rotary knob until the cursor points to **mode**
9. Press **Select**
10. select **EBU** or **SMPTE** via the rotary knob

Via Shortcut

1. Press **Timecode**
2. Turn the rotary knob until the cursor points to **reader**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **LTC**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **mode**
7. Press **Select**
8. select **EBU** or **SMPTE** via the rotary knob

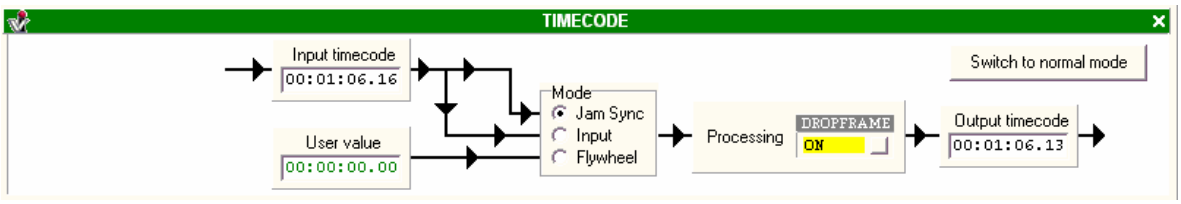
Via Remote Control Software

1. Open the window **Timecode**
2. activate the extended window
3. select **On** or **Off** in the inserter field

15.4 Timecode Generator

15.4.1 Introduction

The timecode generator is highly configurable for different applications. It provides some common and easy to use basic operation modes and additionally an expert mode which allows the definition of complex procedures and trigger events.



INPUT
The Input mode passes the incoming timecode directly to the output without any processing. This maintains the 1:1 relationship picture to timecode. But the user should be aware, that it may produce a non continous flow when the system acts as a frame store synchronizer. Drop frame timecode may be disturbed too.

FLYWHEEL
The generator runs free and delivers an independent, nondisturbed timecode which conforms to the standards. It can be manually set to define the start value.

JAM-SYNC
Thegenerator tries to deliver a nondisturbed time code, which follows the input with a minimum distance.
Small gaps / dropouts at the input will be masked, because the generator is able to run free for a limited number of frames.
If the input timecode fails and starts again or if it skips, the generator will be restarted with a new value which lies as near as possible to the input value.
This guarantees that the timecode on the output is always valid.

15.4.2 Normal- and Expertmode

Under normal circumstances it should be suficient to select some basic parameters like input source, operation mode of the generator (flywheel etc) and some output configuration. This will cover the majority of the applications.

But in some cases, more sophisticated setup conditions are necessary.
For these applications, the timecode generator provides several additional tools.
They are summarized as expert tools and available via the remote control software but not via the local keyboard.
To use these tools efficiently, it is important to keep track about the overall status of the timecode subsystem and this is hard to maintain using the small display of the local keyboard.

The expert mode of the timecode generator will be automatically reset when any generator function is addressed via the local keyboard.
This avoids potential deadlocks, which may occur, because the features of the expert mode are not available here.

The following explanation refers to the **Timecode** window of the remote control software with **Expert Mode** enabled.

BEFORE START
Please refer to the blue subwindow.
The selected condition is transfered to the generator by pressing the initialize button.
Before getting started, the system must be set to a defined status.

The following conditions are available :

- **timecode insertion off**
  timecode at the system output switched off. This can make shure, that any external machines do not act in an unexpected manner.
- **Start value**
  the generator starts with a user defined value
- **Last valid timecode**
  the generator proceeds with the last valid timecode. This allows an interruption of the workflow but nevertheless a continuous timecode will be recorded.

START CONDITION
Please refer to the light green subwindow.
The selected condition is transfered to the generator by pressing the start button.
A trigger event is defined, which starts the generator with the parameter setup with **before start.**

The following conditions are available :

- **manual**
  The generator manually starts with a click on the start button.
- **when input becomes valid**
  The generator waits until the reader detects a valid timecode on the input. If the input is valid during the setup procedure, the generator starts immediately.
- **first time imput matches**
  The generator waits until the input timecode is equal or larger as the trigger value. Any further match will have no effect.
- **any time imput matches**
  like **first time imput matches** but on every match.

STOP CONDITION

Please refer to the dark green and the orange subwindow.
The selected condition is transfered to the generator by pressing the stop button.
A trigger event is defined, which stops the generator. After the match occurs, the generator proceeds for a number of frames which is setup via the orange section in the after stop section.

The following conditions are available :

- **manual**
  The generator manually stops with a click on the stop button.
- **when input becomes invalid**
  The generator stops when the input timecode gets invalid
- **when input matches**
  The generator stops when the input timecode matches the stop value

AFTER STOP CONDITION

Please refer to the red subwindow.
The selected condition is transfered to the generator by pressing the immediate stop button.
This field defines the status of the generator after the stop procedure is accomplished.

The following conditions are available :

- **timecode insertion off**
  The insertion of timecode into the outgoing video signal is swiitched off.
- **user value**
  The output timecode remains valid but shows the defined user value.
- **last valid timecode**
  The ouput timecode remains valid but shows the last valid value.
- **continue timecode**
  The output continues to produce a timecode without any interruption.

Clicking the pause button stops the generator while all conditions setup previously are maintained.
Another click on the pause button unlocks the generator, so that it continues from the current state.

15.4.3 Keyboard setting of the generator mode

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **generator**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **mode**
7. Press **Select**
8. select the desired mode **jam sync** or **input** or **flywheel** by turning the rotary knob

Via Shortcut

1. Press **timecode**
2. Turn the rotary knob until the cursor points to **generator**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **mode**
5. Press **Select**
6. select the desired mode **jam sync** or **input** or **flywheel** by turning the rotary knob

15.4.4 Keyboard setting of the generator start value

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **generator**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **TC start value**
7. Press **Select**
8. set **hours** by turning the rotary knob
9. Press **Select**
10. set **minutes** by turning the rotary knob
11. Press **Select**
12. set **seconds** by turning the rotary knob
13. Press **Select**
14. set **frames** by turning the rotary knob
15. Press **Select**
16. confirm the setting

Via Shortcut

1. Press **timecode**
2. Turn the rotary knob until the cursor points to **generator**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **TC start value**
5. Press **Select**
6. set **hours** by turning the rotary knob
7. Press **Select**
8. set **minutes** by turning the rotary knob
9. Press **Select**
10. set **seconds** by turning the rotary knob
11. Press **Select**
12. set **frames** by turning the rotary knob
13. Press **Select**
14. confirm the setting

15.4.5 Keyboard setting of the generator dropframe mode

Via Menu

9. Press **Menu**
10. Turn the rotary knob until the cursor points to **timecode**
11. Press **Select**
12. Turn the rotary knob until the cursor points to **generator**
13. Press **Select**
14. Turn the rotary knob until the cursor points to **dropframe**
15. Press **Select**
16. set **ON** or **OFF** by turning the rotary knob

Via Shortcut

1. Press **timecode**
2. Turn the rotary knob until the cursor points to **generator**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **dropframe**
5. Press **Select**
6. set **ON** or **OFF** by turning the rotary knob

15.5 Timecode Display

15.5.1 Introduction

The timecode decoded by the reader as well as the output of the generator can be displayed via the on screen display (OSD) on the selected video output (refer to the OSD setting).

15.5.2 Timecode Display Enable

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **display**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **enable**
7. Press **Select**
8. set **Off** or **read** or **generate** or **both** by turning the rotary knob

Via Shortcut

1. Press **timecode**
2. Turn the rotary knob until the cursor points to **display**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **enable**
5. Press **Select**
6. set **Off** or **read** or **generate** or **both** by turning the rotary knob

Via Remote Control Software

1. Open the window **timecode**
2. select the desired display configuration

15.5.3 Timecode reader horizontal display position

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **display**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **rd pos H**
7. Press **Select**
8. set the desired horizontal position of the reader display by the rotary knob

Via Shortcut

1. Press **timecode**
2. Turn the rotary knob until the cursor points to **display**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **rd pos H**
5. Press **Select**
6. set the desired horizontal position of the reader display by the rotary knob

Via Remote Control Software

1. Open the window **timecode**
2. select the desired display position

15.5.4 Timecode reader vertical display position

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **display**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **rd pos V**
7. Press **Select**
8. set the desired vertical position of the reader display by the rotary knob

Via Shortcut

1. Press **timecode**
2. Turn the rotary knob until the cursor points to **display**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **rd pos V**
5. Press **Select**
6. set the desired vertical position of the reader display by the rotary knob

Via Remote Control Software

1. Open the window **timecode**
2. select the desired display position

15.5.5 Timecode generator horizontal display position

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **display**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **gen pos H**
7. Press **Select**
8. set the desired horizontal position of the generator display by the rotary knob

Via Shortcut

1. Press **timecode**
2. Turn the rotary knob until the cursor points to **display**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **gen pos H**
5. Press **Select**
6. set the desired horizontal position of the generator display by the rotary knob

Via Remote Control Software

1. Open the window **timecode**
2. select the desired display position

15.5.6 Timecode generator vertical display position

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **timecode**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **display**
5. Press **Select**
6. Turn the rotary knob until the cursor points to **gen pos V**
7. Press **Select**
8. set the desired vertical position of the generator display by the rotary knob

Via Shortcut

1. Press **timecode**
2. Turn the rotary knob until the cursor points to **display**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **gen pos V**
5. Press **Select**
6. set the desired vertical position of the generator display by the rotary knob

Via Remote Control Software

1. Open the window **timecode**
2. select the desired display position

15.6 Timecode Preset

15.6.1 Recalling a local timecode Preset

work : current status
user 1 .. 4 : user defined local preset
global : user defined global preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **cursor**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **preset**
5. Press **Select**
6. select the desired preset via the rotary knob

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio Conversion & Zoom**
2. change setting in the Preset field as desired

15.6.2 Saving a local timecode Preset

Up to 4 local preset configurations can be stored as user 1 .. user 4

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **cursor**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Save Preset**
5. Press **Select**
6. select the desired Preset via the rotary knob
7. Press **Select**

Via Shortcut

n/a

Via Remote Control Software

1. Open the window **Aspect ratio Conversion & Zoom**
2. select the desired Preset

16 Presets

16.1 Introduction

The ASPECT 2000D contains a powerful hierarchical Preset Subsystem. Most of the functional groups have a local instance (e.g. Proc Amp, Aspect & Zoom etc). All of them are linked to a global Preset function, which allows the user to define complete system setups.
Each of the local / global preset functions provides 4 memory locations.
Via the Remote Control Software, the user can assign a name to each of the global presets, which appears also on the display of the local keyboard. So it is easy to recover a special system setup.
Of course, the current system setup as well as the content of all preset memorys are saved when power is switched off.
Further, the Remote Control Software allows to backup the content of the complete set of preset memory into an MS Excel file. This enables the user to store an indefinte number of system settings which can be edited, restored to the system or archived with a finished job.
The functions Bypass, Freeze and Testpattern are not included into the preset system and will be reset when the system is switched off.

16.2 Preset Operation

16.2.1 Storing of a global Preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Preset**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Save Preset**
5. Press **Select**
6. Turn the rotary knob until the cursor points to the desired position
7. Press **Select**
8. the current global status of the system will be saved

Via Shortcut

1. Press **Preset**
2. Turn the rotary knob until the cursor points to **Save Preset**
3. Press **Select**
4. Turn the rotary knob until the cursor points to the desired position
5. Press **Select**
6. the current global status of the system will be saved

Via Remote Control Software

1. Open the window **Preset**
2. click on **Save** for the desired **global preset** in the global preset field
3. the current global status of the system will be saved

16.2.2 Recalling of a global Preset

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Preset**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Pres**
5. Press **Select**
6. Turn the rotary knob until the cursor points to the desired position

Via Shortcut

1. Press **Preset**
2. Turn the rotary knob until the cursor points to **Pres**
3. Press **Select**
4. Turn the rotary knob until the cursor points to the desired position

Via Remote Control Software

1. Open the window **Preset**
2. click on **load** for the desired **global preset** in the global preset field

16.2.3 Assigning a name to a global Preset

This function is supported only by the Remote Control Software.
The assigned name will also be displayed in the keyboard display

1. Open the window **Preset**
2. for the desired Preset click on **Rename**
3. assign the desired name
4. click **Rename**

16.3 Backup and Restore of Presets on the remote PC

Using the Remote Control Software it is possible to bachup and recall the complete setup configuration of the system into an Excel File.

1. Open the window **Preset**
2. click on **Save Setting to file** or **Load Setting to file**

17 Maintenance

17.1 Introduction

The maintenance function provides the user with some essential basic information about the system configuration and the status.

17.1.1 Version Display

The function enables the display of the current software status of the system.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Maint**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Version-OSD**
5. Press **Select**
6. The display shows the current software status of the system

Via Shortcut

n/a

Via Remote Control Software

n/a

17.1.2 Status Display

The function enables the display of several screens which contain technical infomation about the status of the internal processing blocks.
Please refer to this screens in case of system failure.

Via Menu

1. Press **Menu**
2. Turn the rotary knob until the cursor points to **Maint**
3. Press **Select**
4. Turn the rotary knob until the cursor points to **Status-OSD**
5. Press **Select**
6. Turn the rotary knob to select the desired maintenance screen

Via Shortcut

n/a

Via Remote Control Software

n/a

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